

# **REPORT OF COMBINED SEWER OVERFLOWS (CSO)**

**AT**

**Waterloo Sanitary Treatment Plant  
Waterloo, IA**

**NPDES NO: IA 0042650**

**February 18-19, 2004**

**BY**

**U. S. ENVIRONMENTAL PROTECTION AGENCY  
Region VII  
Environmental Services Division**

## **INTRODUCTION**

At the request of the NPDES and Facilities Management Branch, Water Wetlands and Pesticides Division, I performed a Combined Sewer Outfalls (CSO) at the Waterloo Sanitary Treatment Plant in Waterloo, IA on February 18-19, 2004. The inspection was authorized by Section 308(a) of the Federal Water Pollution Control Act, as amended. This inspection is part of a national survey of randomly selected CSO sites within the United States. This national survey will determine the degree of compliance across the nation in relation to the CSO regulations. This narrative report presents the findings of the inspection.

## **PARTICIPANTS**

### **Waterloo Waste Management Service Department**

Tim Shea, Superintendent  
Larry Smith, Assistant Manager  
Keith Kearns, Plant Operations Manager  
Roseann Cory, Pretreatment Coordinator  
Dennis Gentz, Assistant City Engineer  
Eric Thorson, City Engineer  
Howard Schmitz, City Crew  
Stan Seda, City Crew  
Paul Hirsch, City Crew

### **Earth Tech**

Bob Bamsey, Engineering Consultant to the city

### **Iowa Department of Natural Resources**

Mike Wade, Environmental Scientist

U. S. Environmental Protection Agency  
Margie St. Germain, Environmental Engineer  
Tony Petruska, (observer)

## **PROCEDURES**

I arrived, announced, at the Waterloo Sanitary Treatment Plant on February 18, 2004 at 1:30 pm. I introduced myself and Tony Petruska to Tim Shea and his staff, presented my credentials, and explained the purpose and procedures of the inspection. These included 1) completing the Combined Sewer System Inspection checklist (Attachment A, 10 pages and supporting documents); 2) a facility walk-through including two pump stations and all combined sewer outfalls; and 3) a check of the self-monitoring records.

The procedures I used were documented in the following Standard Operating Procedure: SOP 2332.1B, NPDES Compliance Evaluation Inspection.

## **FACILITY DESCRIPTION**

The City of Waterloo operates a wastewater treatment complex. See Attachment B for a map of the complex where highlighted areas are not in operation. This complex includes two equalization basins, the domestic and commercial treatment process (Easton Avenue), and the satellite industrial process. At the time of the inspection, the equalization basins were empty, and the satellite industrial process was off-line.

Wastewater is received at the plant through two lines. The industrial waste from the northeast section of town is directed to the satellite plant, and the remaining waste is directed to the Easton Avenue plant.

The industrial wastewater is pretreated prior to the plant. The wastewater flows arriving at the industrial satellite plant can be diverted to the Easton Avenue plant or treated at the satellite plant. Flows into the satellite plant are pumped and grit is removed. From the headworks, it is pumped to the magnesium hydroxide building and ultimately to the two two-pass aeration basins. The flows from the aeration basins enter into four final clarifiers. The final discharge then goes into a Parshall flume for flow metering and a monitoring channel prior to combining with the effluent from Easton Avenue Plant.

The Easton Avenue Plant has been going through several upgrades over the last ten years. Basically, the flow enters at the headworks where it is treated by two traveling bar screens. Rags and screenings are currently loaded into a garbage truck and taken to the Blackhawk County Landfill for disposal. The garbage truck can be parked inside the headworks building. After the headworks, the flows can be diverted to the satellite plant or to the equalization basins, if the flows are greater than the Easton Avenue Plant can handle. Flows to the Easton Avenue Plant continue to the two primary clarifiers, with two additional primary clarifiers in standby. Flows continue to four single-pass aeration basins, and then to three secondary clarifiers. One additional secondary clarifier was in standby. The flows continue on through a Parshall flume, and joins the satellite plant flow prior to the river.

Sludge from the primary clarifiers goes to the TAS building for dewatering. Sludge from the secondary and final clarifiers goes to the Return Activated Sludge (RAS) building. Sludges are either returned to the aeration basins or treated. Sludge then is treated in six digesters. Four digesters are operated as primary digesters and two are operated as secondary digesters. The

digested sludge is then thickened and filter pressed to approximately 17% solids. The City of Waterloo generates about 55 tons of solids per day, five days per week.

The effluent at the river typically continues into the diffuser line which crosses the river, allowing for several small streams of effluent to be dispersed across the river's flow. When the river stage is greater than 5.65 feet, the diffusers close due to head pressure, and the effluent is diverted to the old effluent channel.

During rain events when flows are high, water is diverted to the two equalization basins. The first basin is used as a settling basin, while the second basin provides additional holding time. If the high flows continue, the equalization basin will have an effluent that discharges to a stream and continues on to the river. Effluent water quality is determined by collecting a daily grab each day of the effluent flow. When flows subside, the remaining water in the basins are redirected through the plant for treatment. Water quality from the equalization basin typically meets the effluent criteria.

The City of Waterloo was a combined storm and sewer community. The city has eliminated all the outfalls along the river, and is systematically removing combined lines. Attachment C is a map of the city. The orange highlighted area was a combined line area, and has been mostly separated as part of the Road Reconstruction Project. The green highlighted area is still a combined line area, with separation to occur concurrently with any road reconstruction. The remaining three combined sewer outfalls identified by the city were inspected and found not to be CSOs. See the inspection notes in Attachment D. Approximately 17% of the 352 miles of sewer lines are combined lines without any outfalls.

## **FINDINGS AND OBSERVATIONS**

The following findings were discussed with Tim Shea and his staff during the exit meeting on February 19, 2004 at 11:30 am.

1. The city staff and management have obviously stressed preventive maintenance strategies. They stressed it was easier to care for equipment before critical failures, even to the point of bragging of being caught up with all the work orders. After reviewing the outstanding work orders, approximately 100, it appears that most of the outstanding work orders were periodic checks and non-priority repairs.
2. The permit did not match the design of the combined sewer system. Attachment E contains the current permit. Namely the Combined Sewer outfalls were not part of the combined sewer system. Outfall 002, 60 inch line ahead of bar screen, was closed, abandoned, and not used (as documented by the city, and requested of the state). Outfall 004, Hackett Road Lift Station, is a sanitary sewer lift station with no combined lines flowing into it. There is a serious inflow problem at this station which is observed when the river elevation is high, the ground is saturated, and there is rainfall. This is an Sanitary Sewer Overflow (SSO). Outfall 010, the Equalization Basins, is not a CSO because flow comes into the plant through the headworks before being diverted to the equalization basins during high rainfall events. This outfall is within the plant structure, and is considered a bypass with primary treatment. Even though some combined lines remain within older sections of the city, all combined flows are directed to the plant without an opportunity for diversion or overflow. Mike Wade, IDNR, suggested that the

city make a formal request to modify the permit to show the actual design of the plant. Attachment F summarizes the Nine Minimum Controls as well as the justification for removing Waterloo from the CSO Community list. Attachment G is the Guidelines for Bypass Reporting and Response provided by Mike Wade of IDNR.

3. The effluent sample was being collected from the Easton plant in a chiller just prior to the Parshall flume. A book was on top of the chiller which recorded the temperature of the chiller and the technician reading the temperature. The last recorded date was December 30, 2003. The temperature of the chiller was 7°C, not the method required 4°C.

NOTE: The sample was not collected following the methods specifications listed in 40 CFR 136. Because documentation was not available, it is unknown how many samples since December 30, 2003 were collected inappropriately.

4. The meters measuring the flows at the Parshall flumes have not been calibrated. The meters are HydroRangers. According to the operation manual for the equipment, the readings are within 2% of actual, or else an error code appears on the screen. Larry Smith indicated that they have never had a problem with the accuracy of the units. I recommended that they do a simple verification of the reading by comparing a measuring stick reading with the meter reading once a year. This would provide additional assurance that the meters were functioning appropriately.
5. The sewer line cleaning is performed on all lines at least once every five years, according to Larry Smith. A map is hanging on the wall of the crew supervisor which has lines marked that have been cleaned. Within the last 6-9 months, the line cleaning has been switched over to the computer system. It was not easily determined if all lines had been cleaned within the last five years, or if any given line had been cleaned at least once within the last five years.

## RECOMMENDATIONS

1. The city should request modifications to the permit to accurately show the plant and system's design, and to show the city is not a combined sewer system (CSS).
2. The city should correct the refrigeration unit which collects the effluent sample, and provide documentation of its operation.
3. The city should calibrate the meters at the Parshall flumes on a regular basis or during startup to verify proper operation.
4. The city should continue adding the sewer line cleaning to their computer program for ease of tracking the five-year cleaning schedule.

  
Margaret E. Wickham St. Germain, EIT  
Environmental Engineer

Activity No. MSG42

Date: 3/3/04

**Attachments:**

1. Attachment A: Statistically Valid Noncompliance Rate Project– Combined Sewer System Inspection Checklist with attachments (45 pages)
  - Attachment A1: Request to eliminate Outfall 002 (1 page)
  - Attachment A2: Collection System Summary (1 page)
  - Attachment A3: Example Work order with instructions (1 page)
  - Attachment A4: Example Work Order for Lift Station inspections (4 pages)
  - Attachment A5: Equalization Basin Overflow Sample Analysis (2 pages)
  - Attachment A6: Map of WWTP Complex obtained from computer system(1page)
  - Attachment A7: Map of city with Local Flood Protection (1 page)
  - Attachment A8: Summary of complaint logs (1 page)
  - Attachment A9: List of Attendees for Inspection (1 page)
2. Attachment B: WWTP Map with operable units (1 page)
3. Attachment C: Waterloo Sewer Map (1 map size page)
4. Attachment D: Inspection notes (9 pages)
5. Attachment E: NPDES Permit # IA0042650 and last inspection (25 pages).

**Waterloo Photos—February 18-19, 2004**

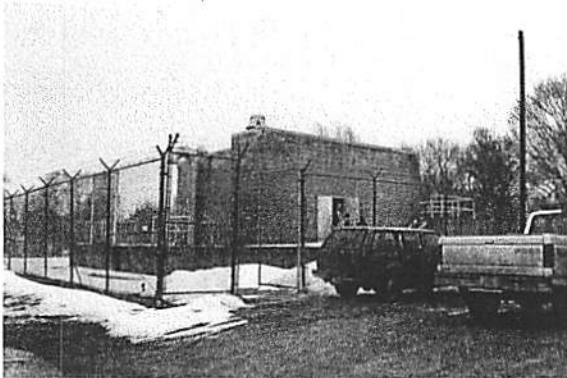


Photo 1: Hawkeye Lift Station, exterior.



Photo 2: Hawkeye Lift Station, three HLS Pumps in a dry pit.



Photo 3: North Hackett Lift Station, exterior, Outfall 004.



Photo 4: North Hackett Lift Station, Bypass pump into 150,000 gallon tank prior to bypass.



Photo 5: North Hackett Lift Station, Signage on door.

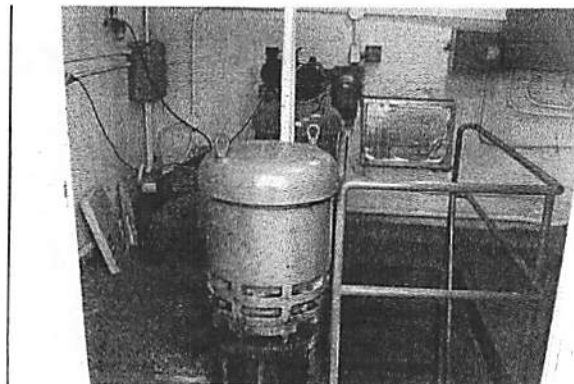


Photo 6: North Hackett Lift Station, two pumps.



Photo 7: North Hackett Lift Station, top of overflow tank.



Photo 8: North Hackett Lift Station, Outfall pipe—green pipe near the center of the photo.



Photo 9: North Hackett Lift Station, same view as Photo 8, but from the parking area in front of the lift station.

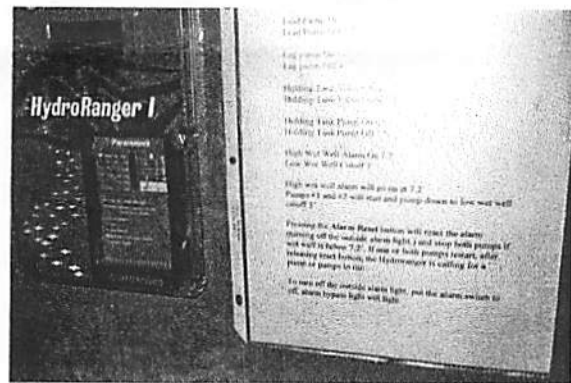


Photo 10: North Hackett Lift Station, pump level operation sheet on control panel.



Photo 11: Douglas Lift Station, exterior.



Photo 12: Douglas Lift Station, interior.



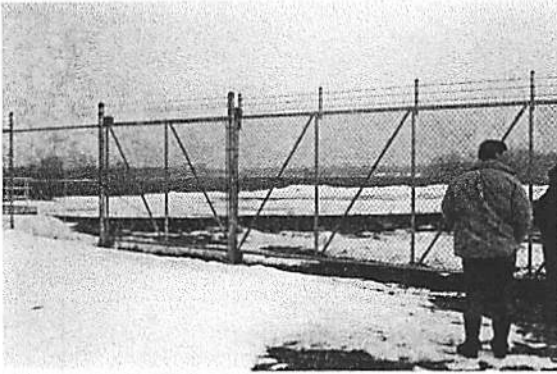


Photo 13: WWTP Equalization Basin.

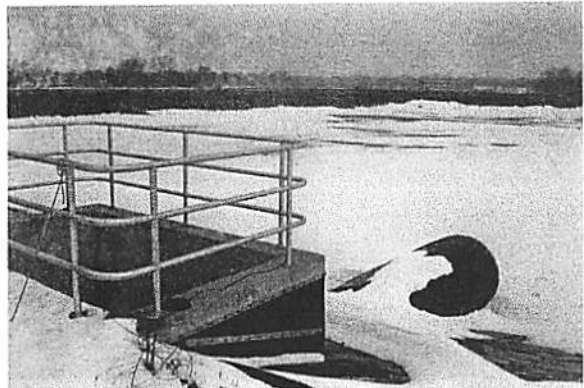


Photo 14: WWTP Equalization Basin outflow structure.

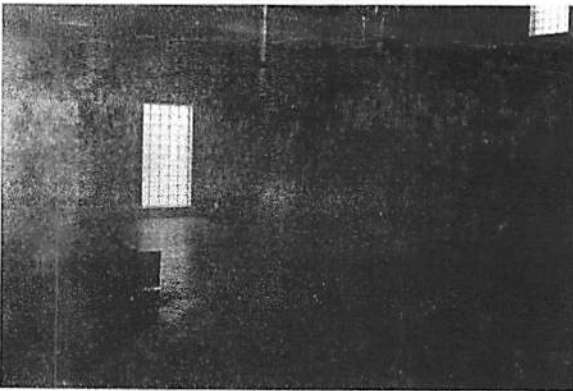


Photo 15: Easton Plant, Three Aeration blowers for Easton Plant, 800 HP.

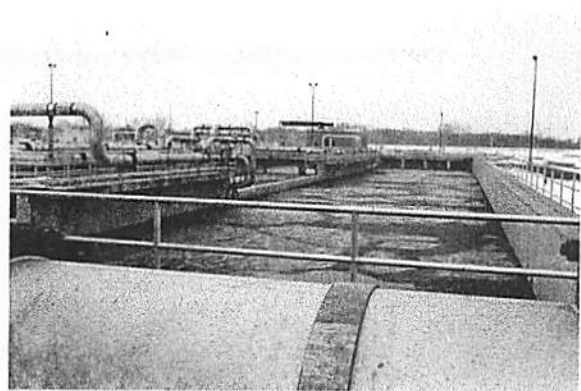


Photo 16: Easton Plant Aeration Tanks

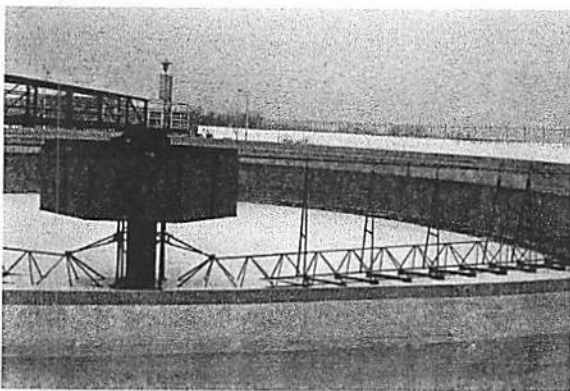


Photo 17: Easton Plant, empty primary clarifier

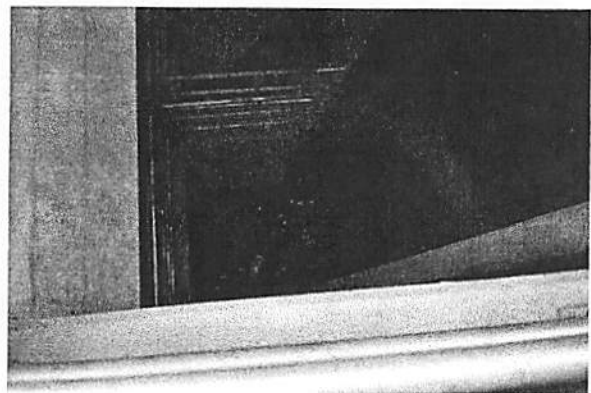


Photo 18: Easton Plant, traveling trash rack.



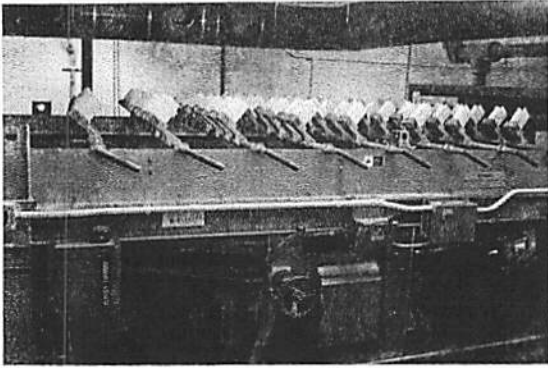


Photo 19: Easton Plant Sludge thickener.

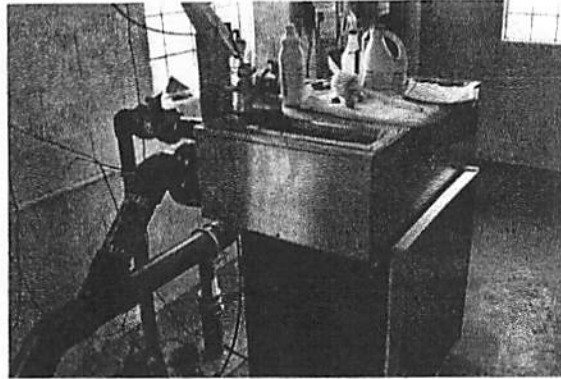


Photo 20: Easton Plant, Effluent sampler collecting a sample, with refrigeration temperature of 7 degrees Centigrade.

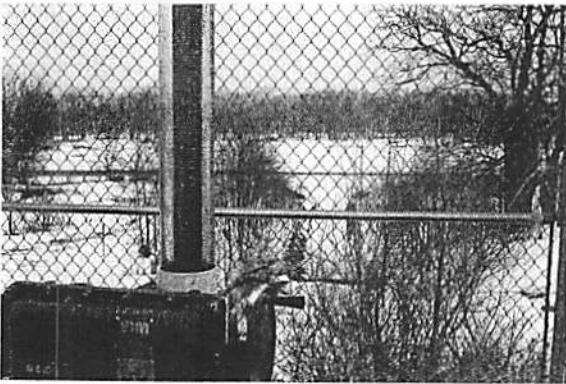


Photo 21: WWTP, Effluent discharge channel when river stage is greater than 5.65 feet.



Photo 22: WWTP, Diffuser effluent location—note melted snow in the left center of photo, and larger width expanding across the river.

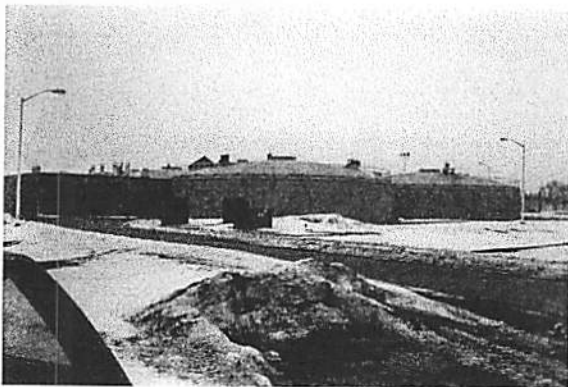


Photo 23: Easton Plant: Sludge digesters

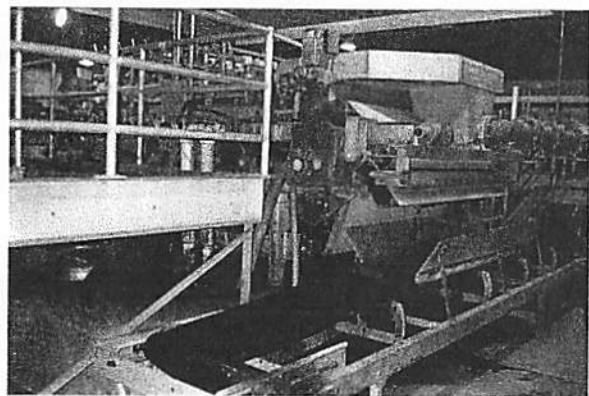


Photo 24: Easton Plant, Sludge filter press.

2/3/04 8AM

A Highment A

STATISTICALLY VALID NONCOMPLIANCE RATE PROJECT - COMBINED SEWER SYSTEM INSPECTION

1 of 12

CONTACT, PERMIT, AND SYSTEM CHARACTERIZATION INFORMATION

CONTACT INFORMATION

<u>Waterloo STP</u>	<u>3505 Easton, Waterloo, IA 50705</u>	<u>IA 0842650</u>
FACILITY NAME	FACILITY ADDRESS	NPDES PERMIT NO.
<u>Larry Smith</u>	<u>Assistant Manager</u>	<u>9-10-02</u>
CONTACT NAME	CONTACT TITLE	DATE OF ISSUANCE
<u>319-241-4230-380061</u>	<u>319-241-4523</u>	<u>9-09-07</u>
PHONE NUMBER	FAX NUMBER	DATE OF EXPIRATION
<u>291-4553</u>		

PERMIT INFORMATION

	YES	NO	N/A	SOURCE
What facilities does the permit cover?				
WWTP and CSOs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CSO outfalls only	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
How are Nine Minimum Controls (NMC) addressed in the permit?				
NMCs are listed generically	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Facility-specific measures representing NMCs are required	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
EPA guidance is incorporated by reference	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Permit requires NMC plan be approved by the permitting authority	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Permit does not include NMCs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If submission of a NMC plan is required by the permit, has the plan been approved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Send, no approval</u>
Does the permit authorize wet weather bypasses? - <u>retention basin before bypass</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>(1) 20mb @</u>
What is the maximum permitted flow rate for the treatment plant?				<u>47.1</u>
Is the facility under any administrative or judicial order to implement NMCs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	MGD

SYSTEM CHARACTERIZATION

Are partially treated effluents combined with fully treated flows prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>(b)</u>
Number of permitted CSO outfalls:		<u>3</u>	<u>(1)</u>	<u>reduced to 2</u>
Length of pipeline in the collection system (all non-lateral lines):		<u>352</u>		miles
Percentage of this length that is separate sanitary sewer		<u>83</u>		%
Percentage of this length that is combined storm water and sanitary sewer		<u>17</u>		%
Number of pump stations in the system:		<u>44</u>		<u>(c) (d)</u>
Number of constructed overflows prior to the WWTP:		<u>1</u>		
Are portions of the interceptors or other lines known or believed to be hydraulically overloaded or undersized?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are there locations known to experience basement flooding or other similar problems?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>glacier house</u>
What information is available on maps kept on-site by the permittee:				
All major interceptors and trunk sewers with pipe size and direction of flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Laterals	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pump stations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Diversion chambers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>North Hackett</u>
Designed CSO locations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flow meters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>do have incl. S.</u>
Rain gauge stations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>do have USGS</u>
Control structures (regulators, diversion structures, weirs, valves)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>- core engineer flood.</u>
Water quality monitoring sites	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Non-designed CSO locations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>2 manholes - (1)</u>
Distinction between combined and separate areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Receiving streams	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Locations of telemetering devices	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>network system</u>
CSO treatment facilities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Environmentally sensitive areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Treatment plant location	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

- (a) Do bypass after pond. have grab sample data for quality, classification & outfall
- (b) combined at receiving stream, 2 outfalls w/ 3 of each other at diffuser
- (c) sanitary - 23, 1st - storm, 3 abandoned
- (d) pretreatment + LS, industrial locations - party 4
- (e) 2 manholes - pump located into sewers



If not (no CCTV), how are collection system equipment malfunctions or other deficiencies identified?

Will the CCTV inspections eventually reach all major (i.e. non-lateral) lines in the system? ☒ ☐ ☐  
How many years? 29.3 yrs

### C. Cleaning and Maintenance

Does the permittee have a schedule for cleaning the sewer lines? ☒ ☐ ☐  
For cleaning catch basins? ☒ ☐ ☐ 2x yrs + call in

How are cleaning frequencies for the sewer lines determined?

5 yr rotation of lines, + restaurant lines

Does the permittee have procedures for reducing solids deposition in the system? ☒ ☒ ☐ pretreatment + street

Does the permittee document sewer cleaning that has been performed? ☒ ☐ ☐ computer

If so, does the documentation in any way differ from the permittee's schedule for cleaning? ☐ ☐ ☐ \_\_\_\_\_

Does the permittee exercise regulators according to a schedule? ☒ ☒ ☐ \_\_\_\_\_

Are any regulators not functioning (e.g. rusted in place)? ☐ ☒ ☐ 1-gas out-of-service

What is the procedure for documenting and correcting collection system deficiencies?

computerized work order system

a How many complaints (re: basement backups, other discharges) are received annually? \_\_\_\_\_

How are complaints addressed?

on-call man 7/24 w/in 30 minutes, ledger → computer

Is a computerized maintenance program used to track work orders? If so, is it used for:

the WWTP? ☒ ☐ ☐ \_\_\_\_\_

the pump stations? ☒ ☐ ☐ \_\_\_\_\_

the collection system, apart from the pump station? ☐ ☒ ☐ \_\_\_\_\_

Does the permittee have the following records?

Cleaning logs

☒☐☐

Citizen Complaints

☒☐☐

Work orders

☒☐☐

Video tape of CCTV inspections

☒☐☐

Maps of problem areas

☐☒☐

Emergency response plan

☒☐☐Training manuals — *try - Licenses - IWPCA*☒☐☐

Does the permittee have a grease control program?

☒☐☐

Does the permittee have a root control program?

☐☒☐

Do the maintenance records indicate recurring problems which the program does not seem to be effective in reducing?

☒☐☐

If so, describe: *grease lines @ restaurants, - being public outreach work w/ county for joint work*

How many full time equivalent staff are dedicated to sewer cleaning and maintenance?

10

What spare parts for pump stations and CSO regulators are kept in the WWTP inventory?

*- bags as needed**- hose bearings, grease, electronic***D. Operation of the Collection System**

How many pump stations have a backup power supply? How many of these have:

Dual feed?

1 at pretreatment facility

On-site generator?

0

Off-site portable generator?

1

How many pump stations have backup pumping capacity if the largest pump goes down?

0

How many times has a pump failure (or inadequate pumping capacity) resulted in a CSO?

all - dead flag pumps.

How many pump stations have permanent flow meters?

2

How many pump stations are monitored remotely?

2What is the annual operating budget for the collection system? *budgets not enough*\$ 6M

How many miles are operated within this budget?

> 350

miles

What type of training does the permittee provide to collection system personnel?

*licenses - Plant**IWPCA - for collection - all except 1*

Does the permittee have procedures for regulating diversion and bypass valves?

☐☐☐If so, describe: *36" red metal - plant only bypass valve*

① all others have flow meters.  
② - WWTP, PS, collection

How many employees currently hold State certification as collection system operators?  
 What flow rate can the WWTP receive before additional flow adversely affects the system?  
 At what WWTP flow rate will the CSOs begin to discharge?  
 At what precipitation level (e.g. 0.5 inches in 12 hours) will CSOs begin to discharge?

~~at least 10~~ - 1000A -  
 70MG - hydraulic 85MGD  
 ? MGD  
 \* only w/ high river levels

II. MAXIMUM USE OF THE COLLECTION SYSTEM FOR STORAGE

Has the permittee used a computer model to evaluate storage available in the system? ☐ ☒ ☐

If not, what evaluation has the permittee conducted to determine how storage can be maximized?

not needed  
 2MG Belmont  
 20MG @ plant - basins

Does the permittee do a pre-storm drawdown of the WWTP wet well and interceptors to add additional wet weather capacity? ☐ ☒ ☐

Which, if any, of the following does the permittee use for storage of untreated sewage?

Abandoned pipelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Catch basins storage tanks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Earthen basins	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
First flush tanks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
In-receiving water flow balance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
In-sewer storage (e.g. raising weirs, regulator adjustment)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lagoons	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Open concrete retention tanks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Closed concrete retention tanks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storage tunnels and conduits	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

2m Belmont + Hackett Tower Park

Which, if any, of the following does the permittee use to reduce storm water inflow:

Area drain, foundation drains, and roof leader disconnection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Basement sump pump redirection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flow restrictions and catch basin inlet modification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grassed swales and infiltration trenches	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Infiltration basins	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
On-street surface storage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Porous pavements	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Storm water detention basins	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storm water infiltration sumps	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

① universal plumbing code

If weirs have been raised to maximize storage, at which CSO locations have they been raised? NA

What other practices has the permittee implemented to maximize storage?

NA

① universal plumbing code

Does the permittee require, through service agreements, that contributing separate sanitary sewer systems implement programs to reduce inflow and infiltration (I/I)?

☐ ☐ ☒

Does the permittee have any other programs for reducing I/I in portion of the system owned and/or operated by other entities?

☐ ☐ ☒

### III. Review and Modification of Pretreatment Requirements

Does the permittee have a pretreatment program?

☒ ☐ ☐

What percentage of flow to the POTW is non-domestic?

☐ ☒ ☐ 40

% 4460 (2)

Has the permittee identified industrial users whose discharge could reach CSOs?

☐ ☒ ☐

- not in CSO -

If so, does the permittee have documentation of this evaluation?

☐ ☐ ☒

Has the permittee modified its pretreatment program to reduce IU discharge to CSOs?

☒ ☐ ☐

\* *Intercepter from 18P*  
*Cable changed - end 1991*

If so, do the modifications

Prohibit batch discharges during wet weather?

☐ ☐ ☒

Require detention of industrial discharge during wet weather?

☐ ☐ ☒

Other: \* *developing local limits, submitted to DNR*

If the permittee has not modified the pretreatment program, is it because the permittee has:

Not performed any evaluation of how programs could be modified?

☐ ☐ ☒

Determined that IU discharge does not impact CSOs?

☐ ☐ ☒

Determined that necessary requirements would be too costly for IU?

☐ ☐ ☒

Determined that necessary modifications would be technologically infeasible?

☐ ☐ ☒

Does the permittee have a process for periodic review of the pretreatment program?

☒ ☐ ☐

*LDNR, EPA,*  
*city of siles*

### IV. MAXIMIZATION OF FLOW TO THE WWTP

Is the maximum wet-weather WWTP capacity reached during wet weather events?

☐ ☒ ☐

If a bypass is used, does the permittee monitor bypass flow rates?

☒ ☐ ☐

*state report*

Is there any evidence that flows are discharged through CSOs and/or bypasses when the WWTP flow rate is below maximum capacity?

☐ ☒ ☐

Are other treatment units available for use during a storm event?

☒ ☐ ☐

Has the permittee determined the hydraulic capacity of each pump station?

☒ *in plant* ☐

*system - some*

- Has the permittee determined the hydraulic capacity of each influent sewer?

☐ ☐ ☐

Is pump station capacity smaller than interceptor capacity in any portions of the system?

☐ ☒ ☐

What other bottlenecks, if any, has the permittee identified in the collection system?

*High rivers gages - garden avenue (only combined area)*  
*- done study*

*NE Interceptor -*

Has the permittee upgraded any pump stations to increase capacity?

☒ ☐ ☐

*3 storm*  
*not 5 gages - 84 years*

Has the permittee identified any process limitation at the WWTP? If so, what are they?

*- addressed in construction of plant*



Has the permittee evaluated methods of providing partial treatment to a portion of the wet weather flow?

retention pondsV. ELIMINATION OF DRY WEATHER OVERFLOWS

How does the permittee become aware of dry weather overflows (DWO)?

*citizen complaint - in street  
operators at plant  
@ Eco-Nascent during inspection*

What are the most common causes of dry weather overflows? *NA*

What steps has the permittee taken to prevent dry weather overflows at problem locations? *NA*

*no DWO in 5 yrs*

Do CSO warning signs provide a phone number for reporting dry weather CSOs?

all pump stations

Does the permittee document dry weather overflows? Does the documentation include:

Date and time of overflow



Volume of overflow



CSO identification number



Cause of overflow



Corrective action taken

(m) + testing + cleanup

Does the permittee's documentation match reports to the permitting authority?



Did the inspector observe dry weather overflows during the inspection?



If so, at which CSO location(s)?

VI. CONTROL OF SOLID AND FLOATABLE MATERIALS

Which, if any, of the following methods does the permittee use to control solids/floatables:

Baffles

Nascent

Containment booms/barrier curtains



Continuous deflective separation systems



Floating netting units



(m) by state protocol



Direct mail notification  
Reverse 911

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

If signs are posted, what does the notice on each sign read? *take picture -*

How does the permittee document that these methods were implemented? *not document*

Is public access to CSO-impacted waters restricted?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>for flood waters</i>
--------------------------	--------------------------	-------------------------------------	-------------------------

IX. MONITORING TO CHARACTERIZE CSO IMPACTS ON RECEIVING STREAMS

Which, if any, of the following methods does the permittee use to monitor the frequency and duration of CSO discharges?

Installed sensors and telemetry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Visual survey during scheduled inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Visual survey during wet weather?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Citizen complaints?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Which, if any, of the following methods does the permittee use to measure the impacts of CSOs on receiving streams?

Visual survey of receiving stream when CSOs are active	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Biosurveys	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>(n)</i> _____
Water quality sampling				
BOD/CBOD	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Total suspended solids	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Dissolved oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Fecal coliform	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
E. coli	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
enterococci	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

Which of the following parameters does the permittee record for wet weather CSOs?

Time that CSO discharge commences	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Time that CSO discharge is discovered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Time that CSO discharge ceases	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Estimated volume of CSO discharge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Measured volume of CSO discharge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Pollutants in CSO discharge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Are there parameters recorded for all CSO locations?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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*data on Ret Bas.*

If not, for how many CSO outfalls are these parameters recorded?

What volume of combined sewage is discharged through CSOs annually (if known)?

What volume of combined sewage is treated at the WWTP annually (if known)? *all*

*state report*  
[ *1 mg 2gs* ]

*because had not implemented*

Effectiveness of Structural Controls

*new plant improvements*

- ① if local discharge would do testing.  
overflows at plant do test water when & if -
- ② Earth-Test - engineer.

STATISTICALLY VALID NONCOMPLIANCE RATE PROJECT - COMBINED SEWER SYSTEM INSPECTION

10 of 12

Has the permittee conducted any pilot tests of structural controls?



Has the permittee documented pollutant removal efficiencies?



Has the permittee documented a reduction in CSO volume?



*Diffusers*

\_\_\_\_\_  
\_\_\_\_\_

*Has pollutants into stream*

ATTACHMENTS

List of pump stations



List of CSOs



NMC language from permit or plan



Schematic or other diagram of sewer system



Documentation of NMCs



Judicial or administrative order



Sources:

P= Permit

A=Application for permit

L=LTCP

R=Reports submitted

I=Interview of facility representative

D=Direct observation

O=Other

## COLLECTION SYSTEM PUMP STATIONS

Pump Station Name/number	Rated Capacity (MGD)	Draw-down test performed?	Peak Dry Weather Flow (MGD)	Peak Wet Weather Flow (MGD)	Any backup pumps?	Any backup power?	Any flow meters?	SCADA?	Date of last pump station failure	To which CSO does the pump station overflow?
Airline	1.8				Y					
Bush	0.6				N					
Belmont	9.0									2.0M 6 Basin
Byrnesburg	0.15				Y					
Cable Congress	1.45				Y					
Cedar Terrace	0.60				Y					
David	0.20				Y					
Douglas	1.15				Y					
Edward	6.0									
Forrester										
Garden Avenue	2.3				Y					
Gates	0.25				N					
Greenbrier	1.15				Y					
Haskett	0.75				Y					
Hawkeye	0.90				Y					
High 63 South	0.15				Y					
Midway/Titus	0.45				Y					

Midway 0.30

Park Road 2.3

Y

Y

SW

SW

CSO?

3W Quincy (3) 4.6  
 San Louis 7  
 Tower Park 0.50  
 Triangle Tower 0.75

3W Virker Creek  
 Triangle 0.30  
 Virginia 0.85

3W N. 6<sup>th</sup> Street  
 Webster 2.3

24/24 Nawthrac 2.0

Mercury

Archaeology

~~24~~ 24 May 57W

~~24~~ 24 May 56W  
 Independence

Deer sp

Liquid

San P. 5. 100%

Y

Y

Y

Y

Y

Y

Y

Y

Reading

44

(3)

April 1, 1992

AIRLINE

Hwy 20

2212

E MOTOR

Make - U.S. Electrical  
H.P. 10  
Phase 3 60 cycle  
Frame 284UC  
Type H.V.  
Model SFI-1  
Serial P41990541  
R.P.M. 1200  
Volts 220 or 440

W. MOTOR

Same  
Serial P2419346

Controls

Zimmer & Francescon  
Moline, IL  
Serial P1130  
Type Bubbler

E. Pump

Make Fairbank Morse  
Model 5433B28  
Head 33'  
G.P.M. 420  
Serial K2P1055969  
Size 4"  
Time on 30 sec. off 7 min  
Discharge flow  
G.P.M. 846.5  
Rotation C.W.

W. Pump

Same  
Serial K2P1055969-1

Time on 30 sec. off  
Discharge flow  
G.P.M. 486  
Rotation C.C.W.  
Age 1975

Building - Steel underground w/walking entry w/elevator that needs to be repaired to meet state inspection, (note) elevator does work.  
Fenced in, dehumidifier, alarm flashing light, high level  
Paint outside good, inside good.  
Overall condition good.

BEECH

501 Glenwood

Motor

Make-Lincoln  
Volt 220  
Phase 3  
H.P. 3  
Serial Z13621

Pump

American Well  
Aurora, IL  
Fig QMB  
Size 3 1/2"  
Serial 31957  
Rotation C.W.



BELMONT 1985

Building - cement block

1 spac Mod. Emerson Chromolox heater w/50 amp w breaker 480v.3ph city water, 3 - ex. fans; 1- control room; 1 - ea. in wings for wet wells.

Condition of Building - Wing's sweat bad during cold weather, because of grates, they should be replaced with a solid type cover.

Wings need to be sandblast & paint.

Pump Control Panel

A & D Converter, dual setpoint line, logic, low integrator, pump module valve control. D & A converter digital display annunciator pressure switch. Pressure transducer over voltage protection. Elexon power supplies differential pressure transmitter Flygt floats Kent 4" chart recorder & totalizer

#1 pump control module out ofr repair.

All pump need pulled & oil checked.

OVERALL CONDITION FAIR

BYRNBRAE

120

S. Motor

Fairbank Morse

H.P. 2

Phase 3 60 cycle

R.P.M. 1731

Volts 220-440

Amp 6.3 3.15

Type OZKU

Frame TU224BV

Serial F96771

N. Motor

Same

Serial F96770

S. Pump

Fairbank Morse

Fig 5411

Discharge flow

G.P.M. 125

Rotation C.W.

Packing Size 3/8

N. Pump

Same

Serial 651513

Discharge flow

G.P.M. 194

Rotation C.W.

Building - Tile Brick

Heater electric baseboard type

ex. fan dry well

Control Boxes

Old Cutler - hammer with fuses and starter in same box, needs to be replaced, may go out anytime.

Level control  
old S.S. tape, type on stand with 2 mercury switch, high & low level

Pump's pipe motors all need paint

Pumps also need rebuilding

Overall condition - BAD

#### CATTLE CONGRESS

##### N. Motor

Fairbank Morse  
2 speed  
Type KNZKU-1  
Frame 445UP  
Serial F42775  
Phase 3  
Volt 440  
Low speed  
H.P. 33 Amp 41.1  
R.P.m. 1175

##### S. Motor

Same ex. below  
Serial F427744

Low Speed  
H.P. 19 Amp. 27.3  
R.P.M. 880  
High speed

Size Packing 5/8  
V-Joint 330

##### N. Pump

Fairbank Morse  
No name plate

Discharge flow  
G.P.M. 941  
Rotation C.W.  
Bearing Top 5313 Bottom 1215

##### S. Pump

Same

Discharge flow  
G.P.M. 486  
Rotation C.C.W.

##### Bottom S. pump

210/16 Sealmaster M.F.C. 47

Building - Cement slab  
No fence, roof leaks - concrete  
Heater - electric portable  
point - outside fair, Inside very bad  
reparis - pumps need rebuilt, no alarm

OVERALL CONDITION - VERY BAD

#### CEDAR TERRACE

##### E. Motor

Make U.S. Electrical  
H.P. 15  
Frame 254TCV  
Type AV  
Cont. rating 60 C rise  
Lower Bearing 6310J/C3

800 Belle

##### W. Motor

Same  
Serial R2074458

Upper Bearing 63072Z-J03  
Design 3 Code G  
IDR - 3604-01-344  
Serial R2074457  
R.P.M. 1740

E. Pump  
Size 4x4"  
Figure 5442B  
Stage 1  
Frame  
Imp. Dia 9 3/4  
Serial K2W1077020  
S32914  
Discharge flow  
G.P.M. 427

W. Pump  
Same  
Serial K2W1077020-4

G.P.M. 498

Building Fence, Underground w/dome  
Paint - underground (ok) dome  
Heater - chromalox 240V; dehumidifier Oasis  
Control Box - Universal San. Equip. Mfg Co. Inc.  
Breaker 2-80 amp Sq D 240 V; Starters Size 2 Sq D  
Level Control (air flow meter)  
USEMCO Mod 43  
3 Meletron-pressure switch w/micro switch's-lead lay, High alarm  
Air Comp. Rego Model ACL9711A

Pump #2 Rebuilt 2-8-91 w/Chestertron 1-2-3 seal

OVERALL CONDITION - GOOD

DAVID

S. Pump  
Weil Submersible  
Model 4-250214-1.5  
Serial 273-112  
H.P. 1.5  
R.P.M. 1750  
Phase 3 60 cycle  
Volts 240  
F.L.A. 6.40  
Discharge flow  
G.P.M. 158  
Rotation C.W.

N. Pump  
Same  
Rotation C.W.

Discharge flow  
G.P.M. 178  
Age 1981

DOUGLAS

N. Motor

Make Fairbank Morse  
H.P. 5  
Phase 3 60 cycle  
Volts 208-220-440  
Amp's 14.3 - 13.6 - 6.8  
S.F. 1.15  
Type KZKU  
R.P.M. 1450  
Frame 2KU215P  
Serial F319119  
Spec. T1018-2

N. Pump

Fairbank Morse  
Size 4"  
Head 19'  
R.P.M. 750  
G.P.M. 200  
Serial 70769  
Fig. 5412  
6" Discharge flow 4.7  
Rotation C.W.

EDWARDS

S. Motor

Fairbank Morse  
H.P. 60  
Phase 3 60 cycle  
F.L.R.P.M. 1175  
Volts 208 220 240  
Amp. 72.5  
Type KZKU-1  
Frame 4454P  
Spec T1361-1  
Serial F 452521

S. Pump

Fairbank Morse  
Size 12  
G.P.M. 4500  
Head 42'  
R.P.M. 1175  
K2F31245  
C.W. rotation

220

S. Motor

Make Fairbank Morse  
Type QZU  
Phase 3 60 cycle  
Volt 220 44 amp  
H.P. 5  
R.P.M. 1150  
Frame N.J. 284BV  
Serial 356098

S. Pump

Same  
Serial 381460  
Rotation C.W.

Size Packing 3/8

Discharge flow 4.15

N. Motor

Same  
Serial F452522

Size Packing 1/2

N. Pump

Same  
Serial K2F31246

C.W. rotation  
Age 1961  
5710

GARDEN AVE

120

S. Motor

Make Fairbank's-Morse  
H.P. 15  
Phase 3 Cycle 60  
R.P.M. 865  
Volts 208 - 220 - 440  
Type AZAU-1  
Frame 326 UP  
Serial F410433  
Spec T1028-18

N. Motor

Same  
Serial F410432

Size Packing 5/8

S. Pump

Make Fairbank's-Morse  
Size 6"  
Frame R.F.  
Serial K2C1169-3  
Fig 54148  
G.P.M. 1640  
Head 25'  
R.P.M. 860  
Discharge flow  
G.P.M. 2141  
Rotation C.W.

N. Pump

Same  
Serial K2C11689  
Discharge flow  
G.P.M. 1762  
Rotation C.C.W.

U-Joint No. 369

Building Brick needs sandblast & sealed

No fence

Heater - electric baseboard; no alarm; paint - fair

OVERALL CONDITION - FAIR

GATES

800 E. Donald

MOTOR

Make Lincoln Electric  
Serial Z13621  
Frame C6  
H.P. 3  
Volt 440  
R.P.M. 1200  
Phase 3 60 cycle

Discharge flow  
G.P.M. 184  
Rotation C.W.

GREENBRIER

W. Motor

Fairbank Morse  
H.P. 7 1/2  
Phase 3 60 cycle  
R.P.M. 860  
Type KZKU-1  
Frame 286UP  
Serial F432796  
Volt 208-220=440  
Spec T1027-20

W. Pump

Size 5"  
Frame 28  
Serial K2E33813  
Fig. 5413 A  
G.P.M. 750  
Head 20'  
R.P.M. 860  
Discharge flow  
G.P.M. 784

Building Brick, has been stucco

No fence; heater - electric portable; Paint-outside good, inside fair  
No alarm

OVERALL CONDITION - GOOD

HACKETT ROAD

W. MOTOR

Fairbank Morse  
H.P. 30  
R.P.M. 1170  
Volt 208-220-440  
Type KZKU-1  
Frame 365UP  
Serial F431296  
Spec T1252-1

W. Pump

Size 4"  
Serial Zk2D35892  
Fig. 5414A  
G.P.M. 500  
Head 9.7  
R.P.M. 1150  
Discharge flow  
G.P.M. 599  
Rotation C.W.

W. DONALD 1586

E. MOTOR

Same  
Serial F432797

E. Pump

Same  
Serial K2E33814  
Discharge flow  
G.P.M. 672

E. MOTOR

Same  
Serial F431297

Size Packing 5/8

E. Pump

Same  
Serial K2D35893  
Discharge flow  
G.P.M. 520  
Rotation C.C.W.

V-Joint No. 331

Building - Cement slab  
No fence around building, fence around top of holding tank  
Roof leaks. Concrete  
Paint - inside fair; outside good  
heater - electric baseboard, no alarm

OVERALL CONDITION - FAIR

HWY. 63 SOUTH

Sergeant Rd. 3750

E. Motor

Marathon Electric  
Model DE256TTDR  
Frame 256  
H.P.  
Type TDR-BPV  
Phase 3 60 cycle  
R.P.M. 870  
Volts 230-460  
Serial 893373

W. Motor

Same  
7113 AAW  
Serial 893372

E. Pump

Fairbank Morse  
Size 6 x 8  
Fig. 5443 B  
Stage 1  
Head 18'  
R.P.M. 860  
Serial K 2 x 1078456

W. Pump

Same  
Serial 2 x 1078456-1  
Discharge flow  
G.P.M. 673  
Age - 1975  
Discharge Flow  
G.P.M. 556

Tile - Underground w/dome (steel)  
Outside needs paint  
Heater - Chromolox, 240V dehumidifier  
Oasis does not work, Ex. fan

Control Panel Universal Sanitary  
Equip. Mfg. Co., Inc.  
2-Sq D 45 amp breaker, 2 sq. size 1 starter

Level Control U.S.E.M.C.O.  
Model 43 w/5 Honeywell pressure switch w/mercury switch, lead start,  
lead stop, log start, log stop & high alarm  
Air flow meter, inch water gauge.  
Air comp. Rego  
#1 Pump Motor needs new bearings & also pump seal is leaking.



MIDLAND OR TITUS

S. Motor

Make - fairbanks - Morse  
Type KZKH  
H.P. 5  
220 Volt  
R.R.M. 1170  
Frame 2KU256P  
Serial F292289

S. Pump

Make Fairbanks Morse  
G.P.M. 300  
18' head  
R.P.M. 1150  
Size 4"  
Fig. 5412K  
Serial K64082  
Discharge flow G.P.M. 335  
Rotation C.W.  
Size Packing 3/8

Building - Cement slab  
Roof leaks - Concrete  
Heater - portable electric  
No fence, no alarm  
paint - outside-fair; inside-bad

OVERALLL CONDITION - FAIR

MIDWAY

S. Motor

Fairbank Morse  
H.P. 3  
Phase 3 60 cycle  
Volt 208-220-440  
R.P.M. 1165  
Type KZKU  
Frame 2KZU215P  
Serial F377534  
Spec. T1018-2

S. Pump

Fairbank Morse  
Size 4"  
Frame 25

WCF-N

N. Motor

Same  
Serial F292288

N. Pump

Same  
Serial K6480 (?)  
Rotation C.C.W.

Discharge flow G.P.M. 326

U-Joint 369  
Top bearing 6308

4055

N. Motor

Fairbank Morse  
H.P. 5  
Phase 3 60 cycle  
R.P.M. 1170  
Volt 208-220-440  
Type KZKU-1  
Frame 256UPH  
Serial F403258  
Spec. T1025-17

N. Pump

Same  
Serial K2Z11366  
Discharge flow

Serial K2Z11367  
Fig. 5412A  
G.P.M. 225  
Head 35'  
R.P.M. 1150  
Discharge flow  
G.P.M. 326  
Rotation C.C.W.

G.P.M. 321.5  
Rotation C.W.  
  
Size Packing 3/8

Building - cement slab  
No fence, roof leaks; concrete, heater protable , no alarm,  
Paint pump & pipe need it, pumps need rebuilt.

OVERALL CONDITION - BAD

PARK RD.

301

N. Motor  
Westinghouse  
H.P. 15  
Frame 324 U.P.  
Model ABOD  
Phase 3 60 cycle  
Volt 440  
Amp. 20  
R.P.M. 885  
Serial 2

S. Motor  
Same  
Serial 1

V-Joint No. 331

N. Pump  
Fairbank Morse  
Size 8"  
Model 5414B  
Amp dia. 13"  
Serial K2M104070  
Discharge flow  
G.P.M. 1756  
Rotation C.W.

S. Pump  
Same  
Serial K2M104070-1  
Discharge flow  
G.P.M. 1756  
Rotation C.W.  
  
Size Packing 5/8  
Age - 1967

QUINCY

E. Motor #1  
Westinghouse 2 speed  
Volt 440 Phase 3  
Flame 506UP  
Model AIKP  
H.P. 100 R.P.M. 885  
H.P. 60 R.P.M. 705

Middle Motor #2  
General Electric  
Model SR6286XH157A  
H.P. 125  
Type K Code F  
Frame 6286P20  
Volt 460 Phase 3  
Amp 157  
R.P.M. 880  
Serial MGJ 1201117  
Age - 1963

W. Motor #3  
Fairbanks Morse  
H.P. 125 3 phase  
60 cyc F.I. R.P.M. 882  
Volts 440 A.M.P. 180  
S.F. 1.15 Type KZKU-3  
Frame 445  
Serial V7529  
Spec. 01501033

Pump #2  
Fairbanks Morse  
Propeller Pump  
Stage #1 Size 24  
Figure 6310  
Total head 15.5 ft  
Serial No. K252064581  
R.P.M. 880  
G.P.M. 1650

SAN SOUCI

Both pumps same

Hydro-matic Submerisible  
Model SP.GH500M3-3  
Serial 80-38-024  
Phase 3  
Volt 230  
Amp 17.0  
H.P. 5

Type - Wet well w/sump pumps  
dry well w/check valves  
outside control panel  
Alarm - high level light & horn  
Paint - outside fair  
fenced in  
OVERALL CONDITION GOOD

TRIANGLE

E. Motor  
Make General Electric  
Model 5K256DL3046  
H.P. 10  
R.P.M. 1160  
Volt 230460 Phase 3  
Amp 23.5-14.3  
Frame 256JH  
Code H NO. G.P.

Pump #1  
Fairbanks Morse  
Propeller pump  
Size 24 Frig. 6310W  
Serial No. P2F3202  
Imp. A357-3  
Stage #1

Pump #3  
Same  
Stage #1 Size 24 Mod. 6310  
Imp. A357 R.P.M. 880  
G.P.M. 16500  
Total Head 16.5 ft.  
Serial No. T22017986

50

3500 SHAULIS

W. Motor  
Same

E. Pump

Make Fairbanks-Morse  
Size 4 x 6  
G.P.M. 175  
Head 51'  
Frame 25  
Serial K3C1083307-1  
Fig. B5433C  
Stage 1  
R.P.M. 1160  
Amp. 10.916  
Discharge Flow  
G.P.M. 207

W. Pump

Same

Serial K3C1083307

Discharge flow  
G.P.M. 189

Controls

2 sq D 50 A Breaker, Volts 240  
2 Starters Furnace Size 1 3/4  
Cat. #14EF 32AA81  
Autocon control panel  
w/ 2-8204 P.D. switches  
Alt. 8208AA  
Limit alarm 8204AA high level only  
Power Supply 8201P.B.

Invention Ind. Uni-sonic

Echo control, for High on & low off level  
Sump pump .33 h.p. hydromatic  
Building fence - under ground w/ dome  
Paint underground (od) dome needs paint.  
No heater  
dehumidifier G.E. Sahara 20

Overall condition good

VIRGINIA

N. Motor

Make Fairbank Morse  
No. F250819  
Volts 220 440  
Frame 2Ku286P  
Code F  
Spec T1027-1  
H.P. 7 1/2  
Type K34U

S. Motor

Same  
Serial F240529

N. Pump

Fairbank Morse

Size 4"

Fig. 5413

R.P.M. 860

Head 20'

G.P.M. 300

Serial K28522

Discharge flow

G.P.M. 643

Rotation CCW

All pumps rotation C.C.W.

S. Pump

Same

Serial K28461

Size packing 1/2

V-Joint 269

Discharge flow

G.P.M. 621

Rotation C.W.

Logan 836

Building - cement slab

no fence, roof leaks; concrete

heater - electric portable

Paint - outside-fair; inside bad, no alarm

repairs #1 pump noisy bearing

OVERALL CONDITION FAIR

HAWTHORNE

N. Motor

U. S. Electrical

H.P. 100

Phase 3 60 cycle

Frame 445TP

Type RU

Volt 460 Amp. 129

R.P.M. 885

I.D. 9907649-J-827

R2136896

NNR E24800245

Design B. Code G. Class F

S. Motor

Same

I.D. R2137357-846

E3040339M

N. Pump

Aurora

Serial V79-71442

Type 20LM

Stage 1

G.P.M. 1350

Head 18'

R.P.M. 880

S. Pump

Same

Serial V78-72251

Tower Park St. & Holding tank

Type - Outside control panel wet well w/ submerisable pumps & dry well w/check valves & control valves for holding tank. Fenced in.

Year - 1989

Alarm - outside flashing light controlled by allen Bradley S.L.C. programmable controller.

OVERALL CONDITION - GOOD

## **Belmont**

Major pumping station equipped with 2-million gallon flow equalization facility.

Previously served as an on-line pumping station for all of Sewer Service Area No. 16 (1,200 acres $\pm$ ), Sewer Service Area No. 18 (1,300 acres  $\pm$ ) and the John Deere Engine Works and PEC.

Currently serves as an off-line pumping facility for flow equalization.

Station includes 6 non-clog submersible wastewater pumps with room for additional units. The present pumps include four 4-inch diameter pumps with 20 hp motors rated at 750 gpm each and two 6-inch diameter pumps with 35 hp motors rated at 1,700 gpm each.

## **Byrnbrae**

Small pumping station serving approximately five acres of a residential neighborhood.

The station is equipped with two dry-pit wastewater pumps; each is a 3-inch pump with 1½ hp motor and a rated capacity of approximately 180 gpm.

## ~~Edin Terrace~~ *TRIANGLE*

Serves approximately 180 acres of residential area in southeast Waterloo. Contains two dry-pit pumps each with 10 hp motors, 4-inch diameter x 6-inch diameter pumps rated at 175 gpm.

## **David Street**

Small pumping station equipped with two submersible pumps with 1½ hp motors with discharge rated at approximately 150 gpm each.

## **Douglas**

Serves approximately 60 acres of primarily residential development. Station is equipped with two 4-inch dry-pit pumps with 5 hp motors; rated capacity of 750 gpm each.

## **Edward Street**

Assume this must be a storm water station.

## **Forrester**

Assume this is storm water station constructed as part of flood control/highway improvements.

## **Garden Avenue**

Major pumping station located at the intersection of Black Hawk Road, Garden Avenue and Ansborough Avenue. The area served consists of approximately 260 acres which is primarily residential development with some commercial. The pump station experiences overloading during wet weather.

It is equipped with two 6-inch diameter dry-pit pumps with 75 hp motors. The rated capacity of each pump is 1,640 gpm.

## **Greenbrier Pump Station**

Small neighborhood pumping station serving approximately 50 acres of primarily residential development.

The station is equipped with two 5-inch diameter dry-pit pumps with 7½ hp motors; rated capacity 750 gpm each.

## **Hawkeye**

Major pumping station located in southeast Waterloo. Contains three dry-pit pumps with space for one additional. Each pump is powered by a 75 hp motor and rated at 6,000 gpm.

## **Highway 63 South**

Pump station serves primarily the John Deere Engine Works and PEC. The station is equipped with two 6-inch diameter dry-pit pumps with rated capacity of 700 gpm each.

## **Midway**

Serves approximately 40 acres at the west edge of Waterloo developed primarily residential with some commercial flow.

The station is equipped with two 4-inch diameter dry-pit pumps having 5 hp motors and rated capacity of approximately 225 gpm each.

## **Park Road**

Major pumping station in Waterloo serving all of service areas 10 and 15, approximately 1,700 acres.

The station is equipped with two 8-inch diameter dry-pit pumps with 15 hp motors. The existing rated capacity of each pump is 1,750 gpm. The station is also designed to include space for a third pump.



## **Quincy**

Storm water pump station.

## **San Souci**

Small pumping station serving approximately 5 acres of residential area. The station includes two submersible pumps.

## **Tower Park**

Small pumping station serving an area in south Waterloo including a small flow equalization facility to alleviate downstream surcharging.

The station is equipped with two submersible non-clog wastewater pumps, each rated at 180 gpm.

## **Triangle Terrace (Assume this is Belle Street)**

The station is a small neighborhood pumping station serving approximately 90 acres of residential area.

The station includes two 4-inch diameter dry-pit pumps equipped with 15 hp motors having a rated capacity of approximately 500 gpm each.

## **Virden Creek - Storm Water Pumping Station**

## **Virginia Street**

Major pumping station serving approximately 600 acres of northwest Waterloo.

The station includes two 4-inch diameter pumps powered by 7.5 hp motors with current rated capacity of approximately 600 gpm each.

## **West 6th Street - Storm Water Pumping Station**

## **Webster**

Pumping station serves approximately 300 acres of primarily residential area and pumps flow across Highway 63.

The station includes two 15-inch dry-pit pumps equipped with 15 hp motors. The existing capacity of each pump is approximately 1,650 gpm.

# WATERLOO LIFT STATIONS AND PUMPING STATIONS

<u>Location</u>	<u>Name</u>	<u>Type</u>	<u>Year</u>	<u>Cont.</u>	<u>MF #</u>
50 Sans Souci Dr.	Sans Souci San. Sewer Program	SAN	1979	192	MF 7450-7459
<sup>889</sup> <del>891</del> Belle St	Cedar Terrace Lift Station	SAN	1974	175A	MF 6648-6654
1220 Black Hawk Rd.	Huntington Rd. Lift Station #1 A.K.A. Garden Grove Lift Station	SAN	1960	133	MF 1961-1985
3572 Cedar Terrace	Triangle Terrace Lift Station	SAN	1977	189	7545, 7548, 7556, 7557
<del>717 Falls Avenue</del>	<del>ABANDONED Falls Ave Lift Station</del>	<del>SAN</del>	<del>1948</del>	<del>71</del>	<del>MF 657, 663, 676, 6764 8274, 9443, 9494</del>
4055 Midway Drive	Huntington Rd. Lift Station #2	SAN	1960	133	MF 1961-1985
600 Orange Grove	Ansborough Dist. Lift Station	SAN	1957	111	664-666, 2236-2238, 8153
1055 Virginia St.	San. Sewer Ext. & Lift Station	SAN	1954	---	MF 635-644, 656
<sup>2295</sup> <del>891</del> WCF&N DR.	TITUS San. Sewer Ext. & Lift Station	SAN	1955	104	MF 2176-2183
<del>40 E. 7th St.</del>	<del>ABANDONED E 7th St. Sanitary</del>	<del>SAN</del>	<del>----</del>	<del>---</del>	<del>MF 1857, 3501</del>
<del>633 Randall St.</del>	<del>ABANDONED Randall Wellington Relocation</del>	<del>SAN</del>	<del>1973</del>	<del>176</del>	<del>MF 4119, 4123</del> 8880
<del>6551 Summit Ave.</del>	<del>ABANDONED 1959 Sanitary Sewer Program Reber Ave. Pumping Station</del>	<del>SAN</del>	<del>1959</del>	<del>125</del>	<del>MF 2157, 2162, 6473</del> 8880
3750 Sergeant Rd.	Deere Engine Plant Trunk Ext.	SAN	1975	184A	MF 7588-7595
2212 W. Airline	Hwy. 57 West Sanitary Sewer	SAN	1968	166	MF 4124-4131
800 E. Donald	Gates Park San. & Lift Station	SAN	1956	---	MF 2753-2759
1586 W. Donald	Greenbrier San. & Lift Station	SAN	1962	145	MF 2021-2024, 2817
<del>2555 La Porte Rd.</del> Changed To: 3931 Texas St.	Pump Sta. Hawkeye Tech Comp IIIA	SAN	1971	162	4663-4679, 4484, 4490
120 Byrnbrae St.	-----	SAN	----	---	NO RECORDS
2749 Independence	Lagoon & Pump Station	SAN	1992	435	MF 12590-93; 12599-1260

# WATERLOO LIFT STATIONS AND PUMPING STATIONS

<u>Location</u>	<u>Name</u>	<u>Type</u>	<u>Year</u>	<u>Cont.</u>	<u>MF #</u>
719 1/2 Linden Ave.	Independence @ ICRR Underpass	ST	1987 - Rehabilitated	-----	MF 10375-10377
1100 Idaho St.	Idaho St. @ C&GW RR Underpass	ST	-----	-----	MF 3581- <i>See underpass drawer in vault For Pump Details</i>
220 Douglas St.	Sanitary Pumping Station	SAN	-----	-----	NO RECORDS
501 Glenwood St.	Beech St. San. Lift Station	SAN	-----	-----	NO RECORDS
740 Logan Ave.	Edwards St. @ Hwy. 63 Underpass	ST	1961	-----	MF 6801-6806, 8579-8580
301 Park Road	IPS Pumping Station	SAN	1967	76	MF 8771-8777
242 N. Hackett	Sanitary Pumping Station #2	SAN	1960	137	MF 8202, 8205-8207, 8196
242 N. Hackett	Pump Station Storage Basin	SAN	1980	206	MF 8511-8517
836 Logan Ave.	Quincy St. - Virden Crk. Conduit	ST	1961	-----	MF 4861-4862, 4870-4873
" " "					MF 8579-8580
<del>100 Rainbow Dr.</del> Changed To: 220 Amherst Ave.	Sanitary Pumping Station #1	SAN	1960	128	MF 8190, 8192-8195, 8186
800 Logan Ave.	Webster St. Lift Station	SAN	1962	-----	MF 8579-8586
1365 Logan Ave	Lincoln - Ackermant Area (Stage I)	ST	1980	205	MF 8494-8501, 8770
450 Arlington	A.K.A. David St. Lincoln - Ackermant Area (Stage II)	SAN	1981	214	MF 8676, 8678
<del>125 Belmont Ave.</del> Changed To: 626 University Ave.	Highway 63 Pumping Station	SAN	1984	248	MF 8861-8880
1030 Sergeant Rd.	Hwy. 63 Pump Sta. Storage Units	SAN	1986	255	MF 9493-9511
1410 W. Dunkerton Rd.	Country View Care Facility	SAN	1988	374	MF 10483-10485
4001 Kimball	Tower Park Pump Sta. & Holding Tank	SAN	1988	346	MF 10711-10718
715 Mulberry St.	City Hall Sanitary Lift Station	SAN	1991	406	MF 11706-11710
1105 Stratford Ave.	Subdrainage Pump Station Galloway Park Detention Basin	TILE	1989	363	MF 11846-11851, 11858

WATERLOO LIFT STATIONS AND PUMPING STATIONS

<u>Location</u>	<u>Name</u>	<u>Type</u>	<u>Year</u>	<u>Cont.</u>	<u>MF #</u>
52 W. 15th St.	Flood Control Station P-5	ST	1980	(See Flood Protection Plans)	
50 E. 9th St.	Flood Control Station P-11	ST	1983	(See Flood Protection Plans)	
2430 Hawthorne	Flood Control Station P-6	ST	1980	(See Flood Protection Plans)	
255 Fletcher	Hope Martin/Flood Control Sta. P-2	ST	1977	(See Flood Protection Plans)	
125 Forrester	Flood Control Station P-1	ST	1975	(See Flood Protection Plans)	
119 E. 1st St.	Flood Control Station P-9	ST	1980	(See Flood Protection Plans)	
18 Lafayette	Virden Creek/Maynard Station Flood Control Station P-8	ST	1980	(See Flood Protection Plans)	
80 W. 6th St.	Dry Run Separation Sewers (Modified In 1983)	ST	1949	----	MF 7955-7969
	Flood Control Station P-4	ST	1983	215	MF 9315-9320
			1979	(See Flood Protection Plans)	
W.P.C. Plant	Intermediate Clarifier & Pump Sta. SAN		1990	387	MF 11743-11776
3505 Easton Ave.	Ring Levee/Flood Control Sta. P-7	ST	1976	(See Flood Protection Plans)	
810 Water St.	E.6th St. District Storm Flood Control Station P-10	ST	1949	10	MF 3474-3501
		ST	1982	(See Flood Protection Plans)	
26 Westfield	Miles St. Storm Sewer Flood Control Station P-3	ST	1947	1	MF 3506-3511
		ST	1980	(See Flood Protection Plans)	
1610 W. 9th St.	Liberty Park/Dry Run Creek	ST	1979	99A	MF 8210-8215,8230
3256 W. 9th St.	Bontrager Park/Dry Run Creek	ST	1979	99C	MF 8245-8265

1

[illegible]

ret. basin  
Haskitt

max I/I



# CITY OF WATERLOO, IOWA

WASTE MANAGEMENT SERVICES  
3505 EASTON AVE. WATERLOO IA. 50707  
TIM SHEA \* SUPERINTENDENT

January 27, 2004

Mayor  
TIMOTHY J.  
HURLEY

COUNCIL  
MEMBERS  
.....

Adam Schneiders  
Iowa Department of Natural Resources  
Harry A. Wallace Building  
Des Moines, IA 50319

Dear Adam,

(VACANT)  
Ward 1

As per our conversation on 1/27/2004, we are requesting your acceptance of our proposal to eliminate the CSO located at 3404 Easton Ave., Waterloo (WWTP) listed in our NPDES permit as Outfall 002.

CAROLYN  
COLE  
Ward 2

We propose removing the opener and stem from the gate. The gate has not been opened in several years. The last attempt was in 1993 and that was unsuccessful. The gate is rusted shut and no attempts to open it will be made.

BUCK  
CLARK  
Ward 3

JOHN  
KINCAID  
Ward 4

With the addition of two retention ponds at the waste treatment plant, each capable of holding 10 million gallons of liquid, we no longer have need of this CSO. See attached drawings.

RON  
WELPER  
Ward 5

We would like to request an amendment of our permit to reflect the removal of this CSO.

BOB  
GREENWOOD  
At-Large

Thank you for your time and consideration.

ERIC  
GUNDERSON  
At-Large

Sincerely,

Larry Smith  
Assistant Superintendent

## **COLLECTION SYSTEM SUMMARY**

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### **LIFT STATIONS:**

We have a total of 44 Lift Stations.

**23 Sanitary**

**18 Storm**

**3 Abandoned**

**44 Stations**

The work that is described in the breakdowns can all be accomplished in house.

### **GATE WELLS:**

We have a combined total of **109** flood gates and gate valves dispersed throughout the levee and flood control system. They are all in good working condition, with the exception of three (3) that need minor repairs that will be completed over the winter months.



GRIT REMOVAL-GRIT PROPELLER GEAR REDUCER - FIRST 10,000 HRS.

Task No. GR01  
Tenant  
Assigned By PAH  
Assigned To  
Scheduled Start Date 12/01/2003 12:10:41  
Scheduled Finish Date 02/20/2004  
Perform by Warranty No  
Priority 3.00  
Expense Class

Request Date 12/01/2003  
Request Time 12:10:41  
Originator  
Telephone No.  
Extension  
WO Type PM  
Completion Date \_\_\_\_\_  
Completion Time \_\_\_\_\_

CraftCrew SizeEstimated Labor Hours

Equipment No.	Equipment Description	Location	Sub-location 1	Sub-location 2	Sub-location 3
15-M-1-41-1	GRIT PROPELLER NO.1	RAW WASTEWATER PUMP BUILDING	15	SECOND	GRIT REMOVAL

Item No.	Equipment No.	Description	Qty Required	Date Used	Qty Used
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List extra parts and comments here


Employee Code	Equipment No.	Work Date	First Name	Last Name	Regular Hours	Overtime Hours
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**Safety Notes**

Equipment No. 15-M-1-41-1

**Task Instructions**

## LOCKOUT EQUIPMENT

REPLACE BREATHER PLUG WITH METRIC SIZED GREASE ZERK  
REMOVE DRAIN PLUG  
PUMP REPLACEMENT LUBRICANT INTO ZERK  
(LUBRIPLATE 5555 OR EQUAL 3lbs 4 oz)  
FORCING LUBRICANT IN THE REDUCER OUT THE DRAIN  
INSTALL DRAIN PLUG AND REPLACE BREATHER PLUG  
REMOVE LOCKOUT AND TURN ON POWER

USED 3 LBS. 4 OZS. AMOCO ULTIMATE SF00 GREASE



X

## CHECK LIFT STATION FOR PROPER OPERATIONS

Task No. LS-RDS-W  
 Tenant  
 Assigned By PAH  
 Assigned To SRS  
 Scheduled Start Date 02/18/2004 00:00:00  
 Scheduled Finish Date 02/18/2004  
 Perform by Warranty No  
 Priority 3.00  
 Expense Class

Request Date 02/18/2004  
 Request Time 11:27:14  
 Originator  
 Telephone No.  
 Extension  
 WO Type PM  
 Completion Date 2/18/04  
 Completion Time

Craft	Crew Size	Estimated Labor Hours
MAINT	2.00	7.00

Equipment No.	Equipment Description	Location	Sub-location 1	Sub-location 2	Sub-location 3
LS-318	DAVID SAN LIFT STATION	450 W ARLINGTON	DAVID LIFTSTATION	318	MAIN
LS-302	CEDAR TERRACE- SAN LIFT STATION	800 BELLE ST.	CEDAR TERRACE LIFT	302	MAIN
LS-303	TRIANGLE-SAN LIFT STATION	3500 E. SHAULIS	TRIANGLE LIFT STATION	303	MAIN
LS-304	TOWER PARK SAN LIFT STATION	4001 KIMBALL AVE.	TOWER PARK LIFT	304	MAIN
LS-305	63 SOUTH SAN LIFT STATION	3750 SERGEANT RD.	63 SOUTH LIFTSTATION	305	MAIN
LS-306	BYRNBREA SAN LIFT STATION	120 BYRNBREA	BYRNBREA LIFTSTATION	306	MAIN
LS-309	GARDEN SAN LIFT STATION	1220 BLACK HAWK RD.	GARDEN LIFTSTATION	309	MAIN
LS-310	MIDWAY SAN LIFT STATION	4055 MIDWAY	MIDWAY LIFTSTATION	310	MAIN
LS-311	HACKETT SAN LIFT STATION	242 NORTH HACKETT RD	HACKETT LIFTSTATION	311	MAIN
LS-312	CATTLE CONGRESS SAN LIFTSTATION	100 RAINBOW	CATTLE CONGRESS LIFTSTATION	312	MAIN
LS-313	SAN SOUCI SAN LIFT STATION	50 SAN SOUCI DR	SAN SOUCI LIFTSTATION	313	MAIN
LS-314	VIRGINIA SAN LIFT STATION	1055 VIRGINIA	VIRGINIA LIFTSTATION	314	MAIN
LS-315	GREENBRIER SAN LIFT STATION	1586 W DONALD ST	GREENBRIER LIFTSTATION	315	MAIN
LS-301	HAWKEYE- SAN LIFT STATION	3900 TEXAS	HAWKEYE LIFTSTATION	301	MAIN
LS-317	TITUS SAN LIFT STATION	801 WCF&N DR	TITUS LIFTSTATION	317	MAIN
LS-416	BONTRAGER PARK STORM LIFT STATION	3256 W 9TH	BONTRAGER PARK LIFTSTATION	LS-416	MAIN
LS-319	PARK ROAD SAN LIFT STATION	301 PARK ROAD	PARK ROAD LIFTSTATION	319	MAIN

LS-320	WEBSTER SAN LIFT STATION	800 LOGAN AVE	WEBSTER LIFTSTATION	320	MAIN
LS-321	GATES SAN LIFT STATION	800 E DONALD	GATES LIFTSTATION	321	MAIN
LS-322	DOUGLAS SAN LIFT STATION	220 DOUGLAS	DOUGLAS LIFTSTATION	322	MAIN
LS-323	BEECH SAN LIFT STATION	501 GLENNWOOD AVE	BEACH LIFTSTATION	323	MAIN
LS-324	HUNT/ WESSON SAN LIFT STATION	2534 W AIRLINE HWY	HUNT/ WESSON LIFTSTATION	324	MAIN
LS-325	LAGOON SITE	2749 INDEPENDENCE AVE.	LAGOON PUMPS	325	MAIN
LS-401	MILES STORM LIFT STATION	26 WESTFIELD AVE	MILES LIFTSTATION	401	MAIN
LS-402	EDWARDS STORM LIFT STATION	740 LOGAN AVE	EDWARDS LIFTSTATION	402	MAIN
LS-403	QUINCY STORM LIFT STATION	836 LOGAN AVE	QUINCY LIFTSTATION	403	MAIN
LS-404	WCFN STORM LIFT STATION	1400 LOGAN	WCFN LIFTSTATION	404	MAIN
LS-405	IDAHO STORM LIFT STATION	100 IDAHO	IDAHO LIFTSTATION	405	MAIN
LS-406	INDEPENDENCE STORM LIFT STATION	719 1/2 LINDEN AVE	INDEPENDENCE LIFTSTATION	406	MAIN
LS-316	AIRLINE SAN LIFT STATION	2212 W. AIRLINE HWY	AIRLINE LIFTSTATION	316	MAIN

Item No.	Equipment No.	Description	Qty Required	Date Used	Qty Used
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List extra parts and comments here


Employee Code	Equipment No.	Work Date	First Name	Last Name	Regular Hours	Overtime Hours
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SRS	LS 320S W	2/18/04			7	
HMS		2/18/04			7	

## Safety Notes

Equipment No.	LS-318	#2 PUMP	23161.2
DAVID--#1 PUMP	23026.7		
Equipment No.	LS-302	#2 PUMP	3174.8
CEDAR TERRACE--#1 PUMP	3144.7		
Equipment No.	LS-303	#2 PUMP	8443.6
TRIANGLE--#1 PUMP	8361.0		
Equipment No.	LS-304	#2 PUMP	5151.4
TOWER PARK--#1 PUMP	5469.7		

Equipment No. LS-305  
63 SOUTH -- #1 PUMP 173.2 #2 PUMP 158.8

Equipment No. LS-306  
BYRNBEA--#1 PUMP 769.2 #2 PUMP 991.9

Equipment No. LS-309  
GARDEN--#1 PUMP 19527.5 #2 PUMP 18543.2  
#3 PUMP 16.4

Equipment No. LS-310  
MIDWAY--#1 PUMP 4708.2 #2 PUMP 4470.5

Equipment No. LS-311  
HACKETT--#1 PUMP 24544.4 #2 PUMP 26260.8  
#3 PUMP 878.8

Equipment No. LS-312  
CATTLE CONGRESS--#1 PUMP 20782.8 #2 PUMP 18816.6

Equipment No. LS-313  
SAN SOUCI--#1 PUMP 3534.9 #2 PUMP 4531.8

Equipment No. LS-314  
VIRGINIA--#1 PUMP 46126.8 #2 PUMP 59884.9

Equipment No. LS-315  
GREENBRIER--#1 PUMP 4456.7 #2 PUMP 3640.6

Equipment No. LS-301  
HAWKEYE--#1 PUMP 4694.1 #2 PUMP 5065.2  
#3 PUMP 4532.4

Equipment No. LS-317  
TITUS--#1 PUMP 46858.7 #2 PUMP 46915.2

Equipment No. LS-416  
CHECK TRASH RACK AT W 9TH AND PARK LANE. CLEAN IF NEEDED. NO

Equipment No. LS-319  
PARK ROAD--#1 PUMP 57460.8 #2 PUMP 57610.8  
#3 PUMP 1808.4

Equipment No. LS-320  
WEBSTER--#1 PUMP 6359.6 #2 PUMP 4642.7

Equipment No. LS-321  
GATES--#1 PUMP 265.3

Equipment No. LS-322  
DOUGLAS--#1 PUMP 4010.2 #2 PUMP 3274.1

Equipment No. LS-323  
BEECH--

Equipment No. LS-324  
HUNT/ WESSON--WWPUMP #1 1135.5 WWPUMP #2 1281.4

EQPUMP #1 3784.0 EQPUMP #2 3794.3 EQMIXER 12,522.8

Equipment No. LS-325  
LAGOON--#1 PUMP 24220.8 #2 PUMP 23835.9  
#3 PUMP 30190.2  
#1 GAS BLOWER 13710.5 #2 GAS BLOWER 11277.8  
Equipment No. LS-401  
MILES--#1 PUMP 2507.9 #2 PUMP 13004.7  
Equipment No. LS-402  
EDWARDS--#1 PUMP 11359.4 #2 PUMP 11052.4  
Equipment No. LS-403  
QUINCY--#1 PUMP 1168.6 #2 PUMP 648.8  
Equipment No. LS-404  
WCFN--#1 PUMP 1541.6 #2 PUMP 369.2  
#3 PUMP 840.3  
Equipment No. LS-405  
IDAHO--  
Equipment No. LS-406  
INDEPENDENCE--#1 PUMP 16112.5 #2 PUMP 15863.6  
Equipment No. LS-316  
AIRLINE--#1 PUMP 3913.2 #2 PUMP 4907.7

**Task Instructions**

CHECK LIFT STATIONS FOR PROPER OPERATIONS, REPORT ANY PROBLEMS TO FOREMAN OR SUPERVISOR LIST ALL METER READINGS

Facility Name: Waterloo, City of STP

03-May

Facility Number 079001

Outfall No. 010

D A Y	EQUALIZATION BASIN OVERFLOW								
	FLOW	CBOD		TSS		NH3-N		pH	TEMP
Freq									
Units	MGD	mg/l	#/day	mg/l	#/day	mg/l	#/day	SU	*F
1									
2									
3									
4									
5									
6									
7									
8									
9									
10	1.86	23	359	24	373	10.60	165	7.30	60
11	0.62	22	114	21	109	11.82	61	7.39	58
12									
13									
14	0.70	16	95	20	117	11.82	69	7.47	63
15	0.71	21	123	25	149	13.20	79	7.58	61
16	0.71	25	149	23	136	13.30	79	7.82	61
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
Total	4.61	107.10	840	113	884	60.74	453		
Avg	0.92	21.42	168	23	177	12.15	91		
Max	1.86					13.30	165	7.82	63
Min								7.30	58
7/Avg		0	0	0	0				
L-Avg									
L-Max									
L-Min									

SIGNATURE

CERTIFICATE #

Facility Name: Waterloo, City of STP

03-Jul

Facility Number 079001

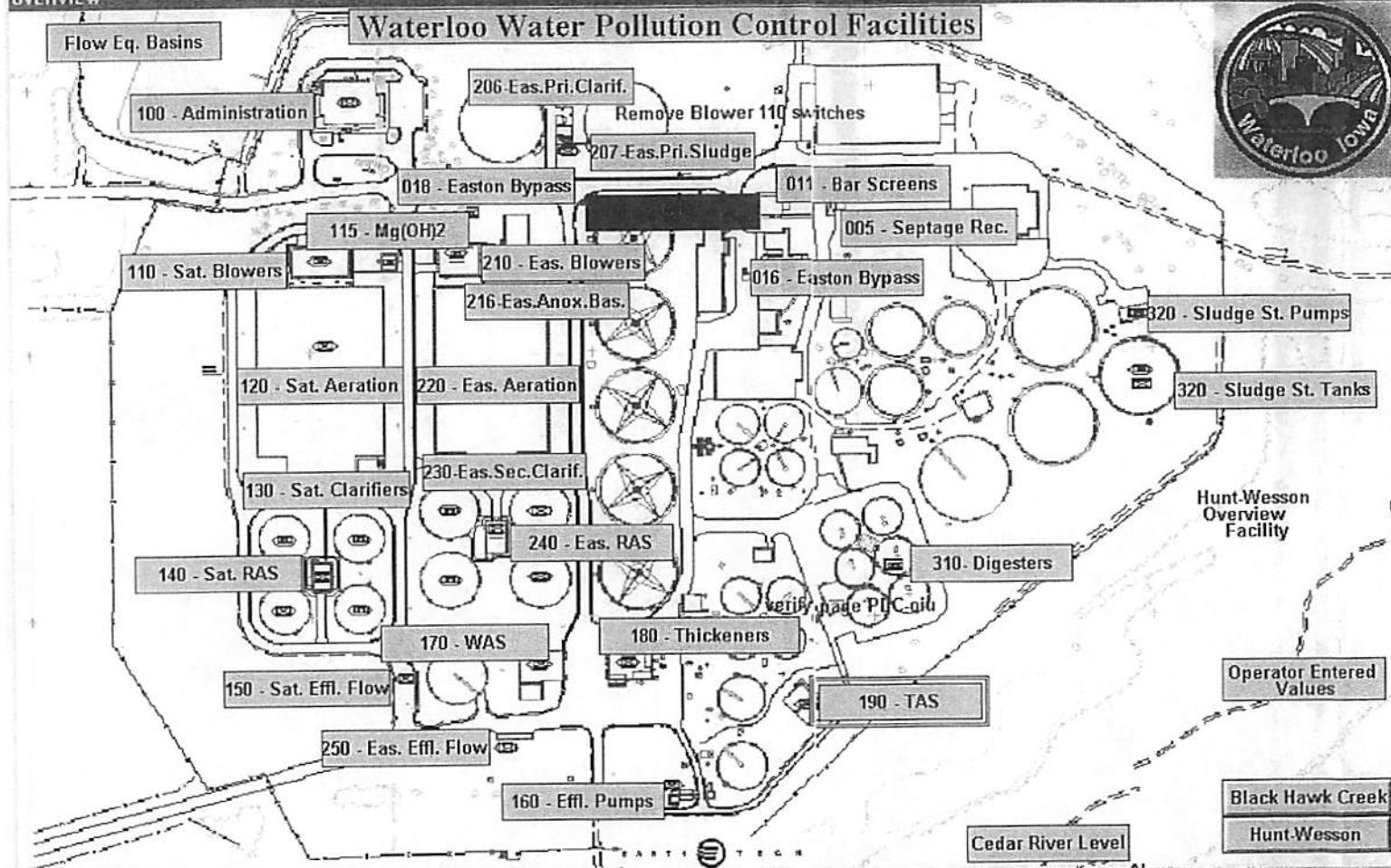
OutFall No. 010

D A Y	EQUALIZATION BASIN OVERFLOW								
	FLOW	CBOD		TSS		NH3-N		pH	TEMP
Freq									
Units	MGD	mg/l	#/day	mg/l	#/day	mg/l	#/day	SU	*F
1									
2									
3									
4									
5									
6									
7									
8									
9									
10	9.38	19	1486	29	2268	2.60	203	7.63	74
11	8.33	13	903	17	1181	3.20	222	7.56	78
12	6.69	20	1117	13	726	4.70	262	7.46	75
13	5.18	22	929	15	648	F2		7.46	74
14	4.11	23	781	22	754	5.80	199	7.44	69
15	0.04	30	10	20	7	7.40	2	7.43	70
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
Total	33.73	126.20	5226	116	5583	23.70	889		
Avg	5.62	21.03	871	19	930	4.74	178		
Max	9.38					7.40	262	7.63	78
Min								7.43	69
7/Avg		0	0	0	0				
L-Avg									
L-Max									
L-Min									

SIGNATURE

CERTIFICATE #

OVERVIEW



01/24 04:04:16 PM ALM DISC Mixed Liquor Gate 2 Open pb

PLC240-MLG2

Overview









# CITY OF WATERLOO, IOWA

WASTE MANAGEMENT SERVICES  
3505 EASTON AVE. WATERLOO IA. 50707  
TIM SHEA \* SUPERINTENDENT

8

Mayor  
TIMOTHY J.  
HURLEY

Date: Feb 19, 2004

I took a random sample from the call mans log for one year (1997-1998) with the following results.

COUNCIL  
MEMBERS  
.....

(VACANT)  
Ward 1

CAROLYN  
COLE  
Ward 2

BUCK  
CLARK  
Ward 3

JOHN  
KINCAID  
Ward 4

RON  
WELPER  
Ward 5

BOB  
GREENWOOD  
At-Large

ERIC  
GUNDERSON  
At-Large

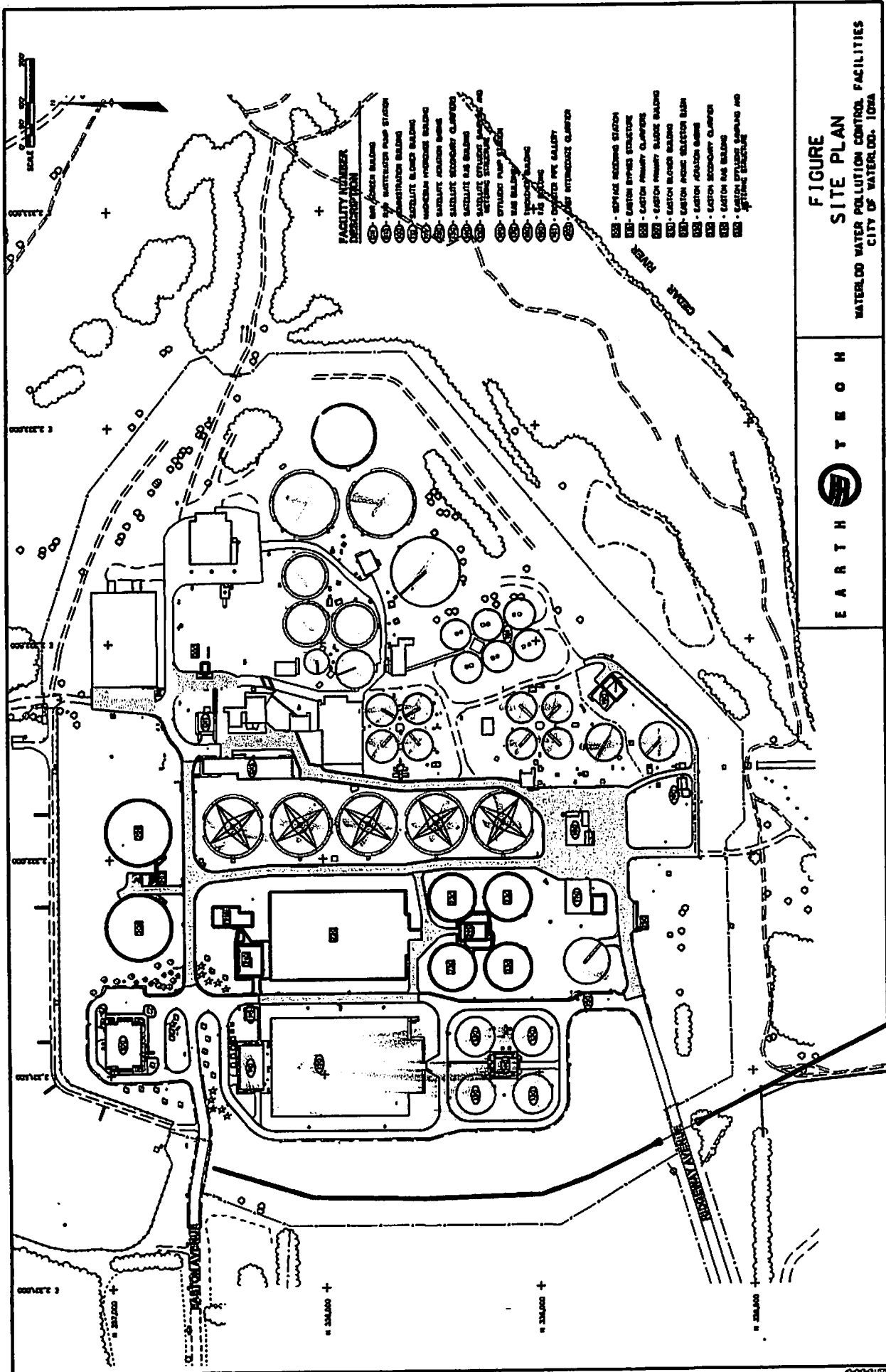
- 1) 418 calls were responded to
  - a) This would include sanitary, odor, catch basins, storm water and other miscellaneous calls.
- 2) Of the 418 calls 79 were reported to have been a plugged sewer main (sanitary)
- 3) 339 calls would be considered other calls or not a plugged sewer main
- 4) 19% of calls received during this period were due to plugged mains (sanitary)

Sign In

Feb 18 - 04

EPA/DNR/ET/city

- 1) Larry Smith City Asst Supt.
- 2) Keith Kearns City
- 3) Dennis Gentz City Engr Dept
- 4) ERIC THORSON CITY ENGR. OFFICE
- 5) BOB BAMSEY EARTH TECH
- 6) Mike Wach FDWR
- 7) Tim Shea City of WL Supt Waste Mgmt Services Dept
- 8) Tony Petruska EPA
- 9) Margie St Gernain EPA
- 10) Rouanne Cody City of Waterloo



highlight not operational

2-18-04

Hatedoo STP

mewy

Arrived at site at 1:15 PM.

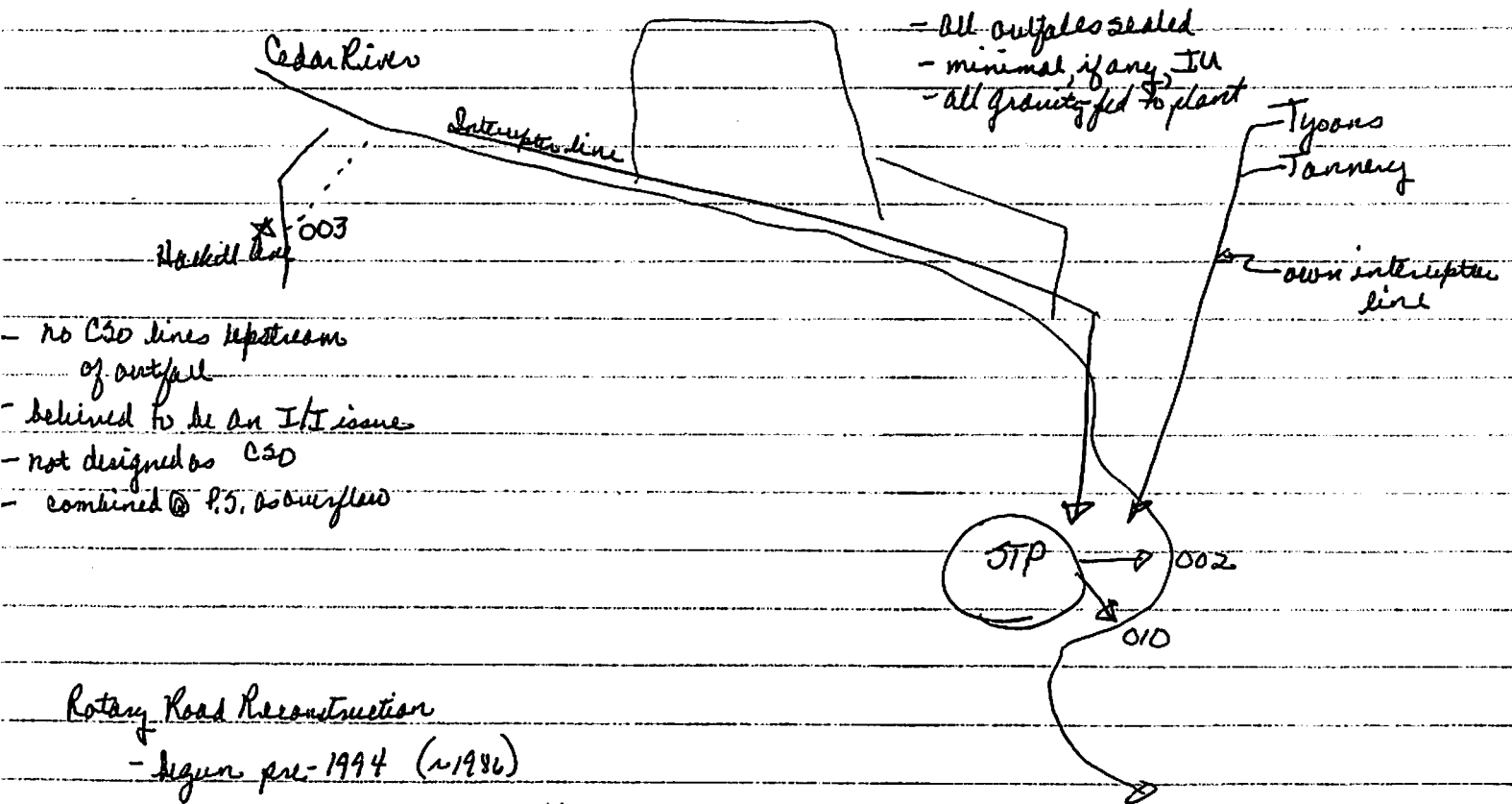
Presented credentials + introduced Tony Petruska.

Attendees - attached list to questionnaire

Waste Management Services, 3505 Eastern Avenue, 50702  
 Eastern Avenue Treatment Plant.

## CSO system

Downtown Area - intermittent CSO lines



## Rotary Road Reconstruction

- begun pre-1994 (~1986)
- as rebuild roads, separate lines

River stage affects overflow frequency rather than flow rate

Bypass - call IDNR w/ report - no documentation

2-19-04

Waterloo

Mewy

62.5 sq mile service area

3 lift stations have retention tanks:

Nashott	0.18 MG
Belmont	2 MG
Tower Park	

other: 2 retention basins 20 MG

Near completion for treatment plant upgrades.

- have allowed 100% to plant
- if greater than plant then direct to retention basins
- reduced SSO + CSO

Things to look for during site inspection

CC = computer

- ✓ 1. Documentation for P.S / L.S. & CSO inspection - checked, but not list of info
- ✓ 2. Last 1-2 overflows @ Nashott (004), Basins (010)
- ✓ 3. Sewer line cleaning - select 2-3 locations, note w/ last cleaned ← track duties not by street
- ✓ 4. Team - pump failures cause over flows? - no pm
- ✓ 5. Bp (eng) - determined hydraulic capacity of influent sewers? pump stations? → sewer study (1985) 1/1, 365 = steps
- ✓ 6. DWD? - NO
- ✓ 7. Take picture of signage w/ phone #
- ✓ 8. P.S. drawdown tests, last failures, how not have failures?
  - make repairs before complete failures

Tower

purchasing phone call check

Nashott Rd L.S. - to be eliminated when airport - 36"

- eliminated overflows

2-19-04

Hilder

muzz

Field crew -

Howard Schnitz

Alan Sela

Pump Station Inspection (1-12 p.m.)

1. record hours - left in notebook at P.S.
2. Manually turn on lock pump
  - listen for any unusual noise
  - water level drop
3. General upkeep
4. Complete W.O. & enter into computer (MP2)

Caught up with work orders - didn't have a lot to do. at this week

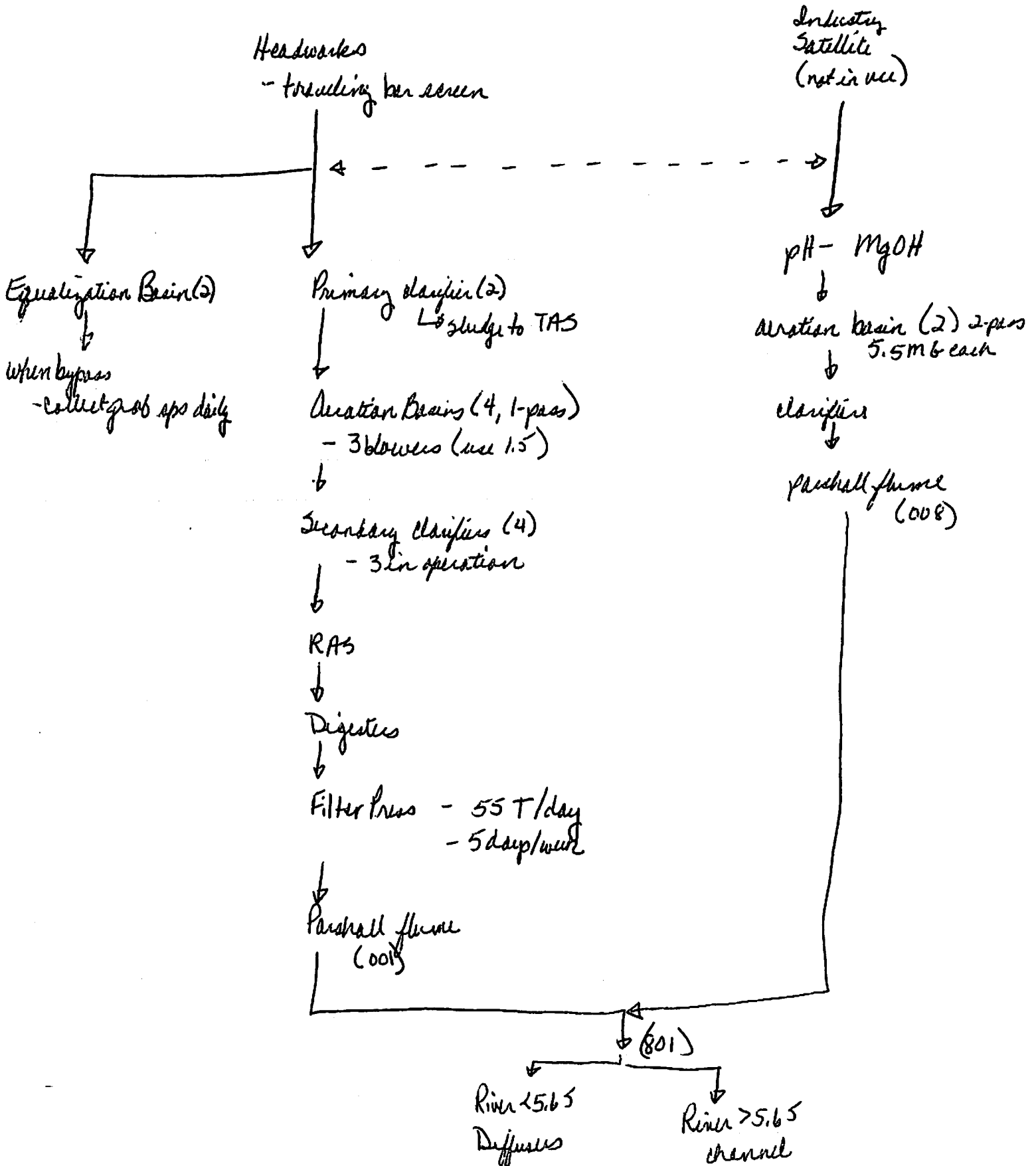
Paul Hinder - computer & work orders

Plant Inspection (13-24 p.m.)

Lab -	sludge	TSS	sample temp = 7°C
	BOD	O <sub>2</sub>	- no log line 12/30/03
	NH <sub>3</sub>		

Hatfield WWT  
Plant Inspection

2/19/04 many



List of documents

- ① Combined sewer system operational plan (need a full copy) — NOT DONE
- ✓ 2. Map of area either w/ pump stations and/or outfalls (copy)
- ✓ 3. Schematic of treatment plant & outfalls (copy)
- ✓ 4. Tower Park - need tank size and service area 60,000 gal combined  
2 sq. miles
- ✓ 5. # of back-up complaints annually (not counting 1993 & 1999)
- ✓ 6. Test results of overflow from retention basins w/in last 5 yrs -  
at least one set of results (one copy)
- ✓ 7. Observe "cable man" book. need a copy of a typical page or excerpt.

Nov 03

To SEE

✓ 8. O & M plans

✓ 9. Storm and sewer maps upstream of Hackett Avenue pump station



70,000 Capital  
pg 6 of 8

NO CSO  
↳ 550

## Findings - Waterloo

1. Need "combined sewer system operational plan" on-site & in hands of operators. — NOT DONE
    - needed to be complete by 3/10/03
    - address NMC
  2. Permit - 2 outfalls described { 004 - Rackett 010 - basins  
002 - @ plant 60" line  
001 - plant outfall
- no CSO  
good enough for 550
3. Need to document CSO Inspections - confirm no backflows. (NMC 1)
  4. Written <sup>public</sup> notification plan (NMC VIII)
    - guidance from IDNR
- 
- ✓ 5. Sampler - 7°C cooler - JNO1 - present
  - ✓ 6. PM is a priority
  - ✓ 7. Parrall flume calibration
  - ✓ 8. Sewer line cleaning - tracking - computerized now -  
↳ Gary on wall

CSO Inspection

Page 1 of 3

Outfall # Hawkeye Lift Station

Date: 2-19-04

Address \_\_\_\_\_

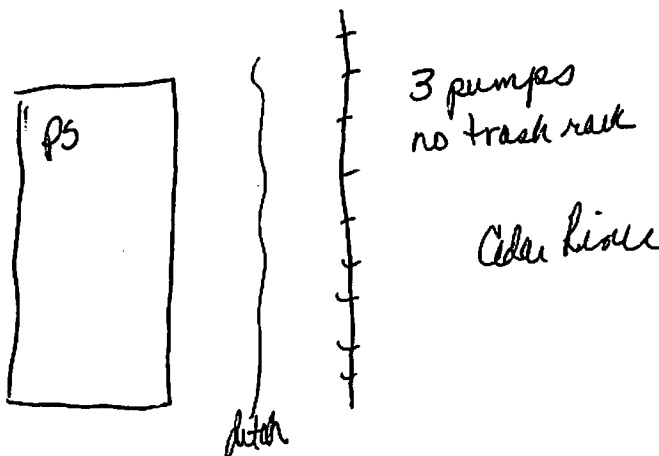
Time: 7:30 am

- ☒ Pictures (2)  
☒ Documents - how many

Type of outfall

- ☐ Flapgate  
☐ Flood gate  
☐ Grit chamber  
☐ Trash Rack/Rake  
☒ Pump Station/Lift Station (# of pumps \_\_\_\_\_)  
☐ Other: \_\_\_\_\_

Diagram and Comments



CSO Inspection

Page 2 of 3

Outfall # 004 - Ruth H. Hett

Date: 2-19-04

Address \_\_\_\_\_

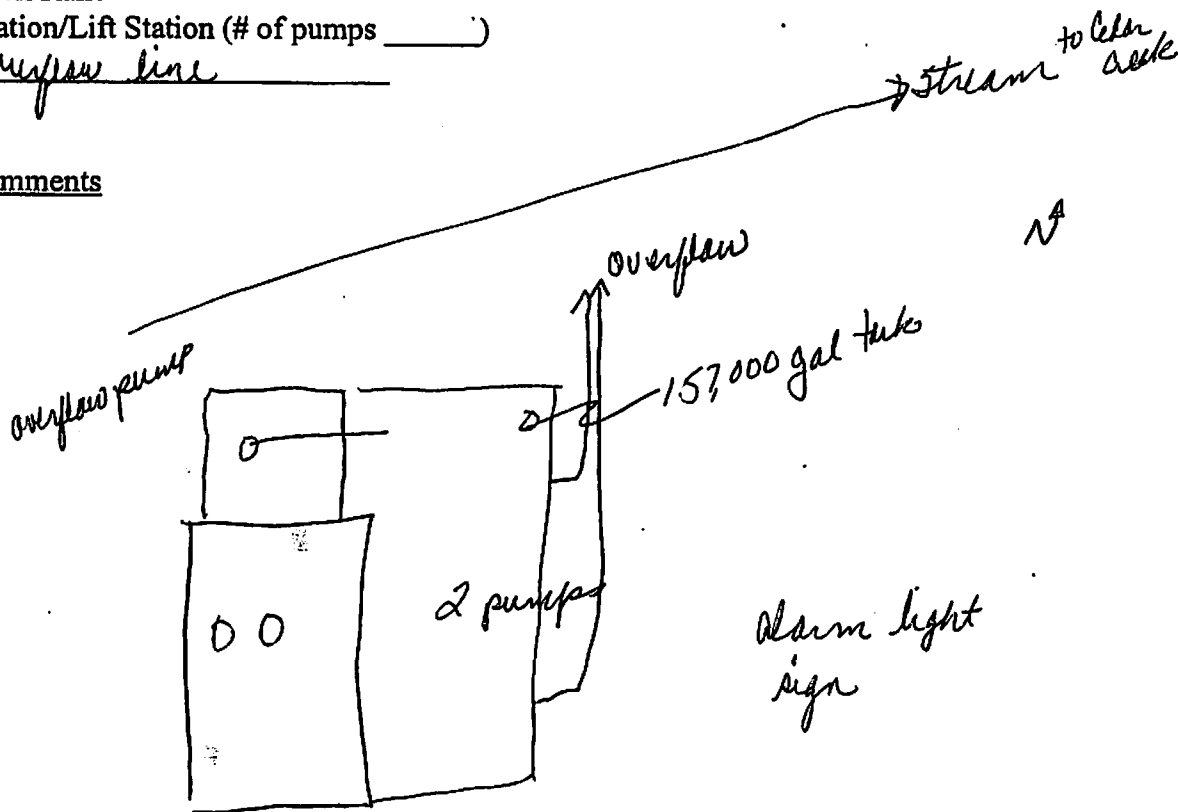
Time: 8:15am

- ☒ Pictures (8)  
☒ Documents — house + lead-leg

Type of outfall

- ☐ Flapgate  
☐ Flood gate  
☐ Grit chamber  
☐ Trash Rack/Rake  
☒ Pump Station/Lift Station (# of pumps \_\_\_\_\_)  
☒ Other: overflow line

Diagram and Comments



CSO Inspection

Page 3 of 3

Outfall # —

Date: 2-19-04

Address Douglas

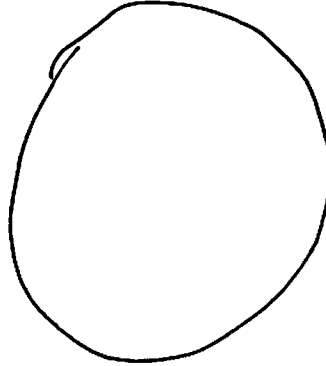
Time: 8:35am

- ☒ Pictures (2)  
☒ Documents *none*

Type of outfall

- ☐ Flapgate  
☐ Flood gate  
☐ Grit chamber  
☐ Trash Rack/Rake  
☒ Pump Station/Lift Station (# of pumps       )  
☐ Other:

Diagram and Comments



*2 pumps  
float ball-bu system  
high level light*

Attachment E

If you receive this fax in error, please call 563/927-2640. Thank you.

**FAX**

Iowa Dept of Natural Resources  
Environmental Services Divis.  
Field Office No. 1  
909 W Main - Suite 4  
Manchester, Iowa 52057

Date 1/05/04  
Number of pages including cover sheet \_\_\_\_\_

To:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_  
Fax Phone \_\_\_\_\_  
C: \_\_\_\_\_

From:

Miles/ea  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone 563/927-2640  
Fax Phone 563/927-2075

**REMARKS:**

☐ Urgent    ☐ For your review    ☐ Reply ASAP    ☐ Please comment



10/11

Amended (1)

# STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR  
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
JEFFREY R. VONK, DIRECTOR

## STATE OF IOWA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROGRAM AMENDMENT TO NPDES PERMIT

Iowa NPDES Permit #  
Date of Issuance:  
Date of Expiration:  
Date of this Amendment:  
EPA NUMBER:

0790001  
September 10, 2002  
September 9, 2007  
February 21, 2003  
IA0042650

### Name and Mailing Address of Applicant:

City of Waterloo  
City Clerk, City Hall  
715 Mulberry Street  
Waterloo, IA 50703

### Identity and Location of Facility:


City of Waterloo Wastewater Treatment Facility  
Township 89 N, Range 12 W, Section 31, Black Hawk County

Pursuant to the authority Iowa Code Section 455B.174, and of Rule 567-64.3, Iowa Administrative Code, the Director of the Iowa Department of Natural Resources has issued the above referenced permit. Pursuant to the same authority the Director hereby amends said permit as set forth below:

The permit is being amended to incorporate a compliance schedule deadline extension to submit the headworks analysis.

Please replace the current Major Contributing Industries Limitations, Monitoring and Reporting Requirements pages in the NPDES permit with the enclosed Major Contributing Industries Limitations, Monitoring and Reporting Requirements pages.

For the Department of Natural Resources:

By   
WAYNE FARRAND, Supervisor  
Wastewater Section

ENVIRONMENTAL PROTECTION DIVISION

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319  
515-281-5918 TDD 515-242-5967 FAX 515-281-6794 www.state.ia.us/dnr

**MAJOR CONTRIBUTING INDUSTRIES  
LIMITATIONS, MONITORING AND REPORTING REQUIREMENTS**

1. You are required to notify the department, in writing, of any of the following:
  - (a) 180 days prior to the introduction of pollutants to your facility from a major contributing industry. A major contributing industry means an industrial user of a treatment works that:
    - (1) Has a flow of 50,000 gallons or more per average workday;
    - (2) Has a flow greater than five percent (5%) of the flow carried by the treatment works receiving the waste;
    - (3) Has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307 (a) of the Clean Water Act and adopted by reference in Rule 62.5(455B); or
    - (4) Is found by the department in connection with the issuance of an NPDES permit to have a significant impact, either alone or in combination with other contributing industries, on the treatment works or on the quality of effluent from the treatment works.
  - (b) 60 days prior to a proposed expansion, production increase or process modification that may result in the discharge of a new pollutant or a discharge in excess of limitations stated in the existing treatment agreement.
  - (c) 10 days prior to any commitment by you to accept waste from any new major contributing industry.

Your written notification must include a new or revised treatment agreement in accordance with rule 64.3(5)(455B).
2. You shall require all users of your facility to comply with Sections 204(b), 307 and 308 of the Clean Water Act.

Section 204(b) requires that all users of the treatment works constructed with funds provided under Sections 201(g) or 601 of the Act to pay their proportionate share of the costs of operation, maintenance and replacement of the treatment works.

Section 307 of the Act requires users to comply with pretreatment standards promulgated by EPA for pollutants that would cause interference with the treatment process or would pass through the treatment works.

Section 308 of the Act requires users to allow access at reasonable times to state and EPA inspectors for the purpose of sampling the discharge and reviewing and copying records.
3. You shall continue to implement the pretreatment program approved March 12, 1984 and any amendments thereto.
4. An annual report in the form prescribed by the Department is to be submitted by March 1<sup>st</sup> of each year describing the pretreatment program activities for the preceding calendar year.

**MAJOR CONTRIBUTING INDUSTRIES  
LIMITATIONS, MONITORING AND REPORTING REQUIREMENTS (Continued)**

5. The City shall evaluate the adequacy of its local limits to meet the general prohibitions against interference and pass through listed in 40 CFR 403.5(a) and the specific prohibitions listed in 40 CFR 403.5(b). At a minimum this evaluation shall consist of the following:
- (a) Identify each pollutant with the potential to cause process inhibition, pass through the treatment plant in concentrations that will violate NPDES permit limits of water quality standards, endanger POTW worker health and safety or degrade sludge quality.
  - (b) For each treatment plant, determine the maximum allowable headworks loading for each pollutant identified in item #5.a. that will prevent interference or a pass through.
  - (c) After accounting for the contribution of each pollutant from uncontrolled (i.e.: domestic/commercial) sources to each treatment plant, allocate the remaining treatment plant capacity to significant industrial users identified in the City's pretreatment program.
  - (d) Complete the evaluation and submit to the Department, by April 15, 2003 a report containing the following information:
    - 1) A list of pollutants identified in item #5.a.. For each pollutant state the reason(s) for its inclusion (e.g. potential to cause interference, potential to cause pass through, etc.).
    - 2) The report shall contain all calculations used to determine the maximum allowable headworks loadings and shall identify the source(s) of all data used (e.g. literature value, site specific measurement, etc.).
    - 3) The contribution of each pollutant identified in item #5d. 1). to each treatment plant from uncontrolled sources and an explanation of how each contribution was determined.
    - 4) The allocation of the maximum allowable headworks loading for each pollutant to each treatment plant, and an explanation of how the allowable loadings will be allocated to significant industrial users regulated by the City's pretreatment program.





THOMAS J. VILBACK, GOVERNOR  
SALLY J. PEDERSON, LT. GOVERNOR

STATE OF IOWA

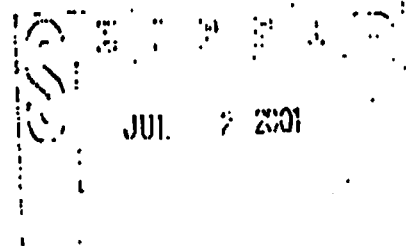
DEPARTMENT OF NATURAL RESOURCES  
JEFFREY R. VONK, DIRECTOR

July 2, 2001

City of Waterloo  
City Hall  
715 Mulberry Street  
Waterloo, IA 50705

ATTENTION: Mayor and Council

RE: Wastewater Compliance Evaluation Inspection  
Facility No. 07-90-0-01



We have enclosed the inspection report prepared by our Field Office Staff and a copy for your wastewater operator.

You will find the inspection report self-explanatory. We encourage you to make every effort to comply with the recommendations. Please note that the City is required to submit a written plan as to how all the required sampling from the newly upgraded plant will be accomplished using only two effluent samplers when three separate sampling locations will be specified in the City's next NPDES permit. This sampling plan is due in this office by August 1, 2001.

Should you have any questions, do not hesitate to write or call this office.

Sincerely,

ENVIRONMENTAL PROTECTION DIVISION

Doug A. Hawker  
Environmental Specialist

Encs.

cc: Wastewater Supt. - Tim Shea, Waterloo WPCP, 3505 Easton Ave. Waterloo, IA 50702  
DNR - Wastewater Section - Des Moines  
Water Compliance Branch - U.S. EPA, Region 7, 901 North 5<sup>th</sup> Street, Kansas  
City, KS 66101

- Field Office 1, 909 West Main Suite 4, Manchester, IA 52057  
563/927-2640 FAX 563/927-2075

KD

**IOWA DEPARTMENT OF NATURAL RESOURCES  
WASTEWATER TREATMENT FACILITY INSPECTION**

**Field Office 1 Manchester**

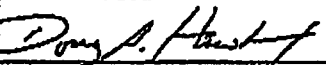
NPDES Permit # 07-90-0-01

Page 1 of 5

<b>FACILITY</b>	<b>NAME:</b> Waterloo Municipal Wastewater Treatment Plant		<b>OWNER:</b> City of Waterloo		
	<b>ADDRESS:</b> City Hall, 715 Mulberry Street	<b>CITY:</b> Waterloo	<b>STATE:</b> Iowa	<b>ZIP:</b> 50705	<b>PHONE:</b>
<b>RECEIVING STREAM</b>	<b>STREAM NAME:</b> Cedar River				
<b>INSPECTION</b>	<b>DATE THIS INSPECTION:</b> 5-17-01		<b>DATE LAST INSPECTION:</b> 7-10-00		
	<b>PURPOSE:</b> Compliance Evaluation Inspection				

<b>TREATMENT PROCESS</b>	<input checked="" type="checkbox"/> Trickling filter <input checked="" type="checkbox"/> Activated sludge <input type="checkbox"/> RBC <input type="checkbox"/> SBR <input type="checkbox"/> Aerated Lagoon <input type="checkbox"/> Lagoon <input type="checkbox"/> Disinfection <input checked="" type="checkbox"/> Other: cross-river diffuser				
<b>DESIGN CAPACITY</b>	<b>MGD:</b> 30.7	<b>POUNDS BOD/DAY:</b> To be determined	<b>PE (BOD):</b> To be determined		
<b>NOW TREATING</b>	<b>MGD (average daily):</b> 20.7 (Apr. 01)	<b>POUNDS BOD:</b> 27137 (Apr. 01)	<b>PE (BOD):</b> 162497 (Apr. 01)		
<b>RESPONSIBLE OPERATOR</b>	<b>NAME:</b> Tim Shea		<b>GRADE:</b> IV	<b>CERTIFICATION NUMBER:</b> 14326	
<b>PERSONS INTERVIEWED</b>	<b>NAME:</b> Keith Kearns Roseanne Cory Larry Smith Joe Sanfilippo		<b>TITLE:</b> Operations Foreman Pretreatment Coordinator Asst. Superintendent DNR - FO #1		

PERMIT COMPLIANCE SUMMARY			
<b>EFFLUENT LIMITATIONS</b>	<b>SELF-MONITORING RESULTS:</b> <input checked="" type="checkbox"/> Sat. <input type="checkbox"/> Marg. <input type="checkbox"/> Unsat.		<b>SAMPLES THIS INSPECTION</b> <input type="checkbox"/> Sat. <input type="checkbox"/> Marg. <input type="checkbox"/> Unsat. <input checked="" type="checkbox"/> None collected
<b>SAMPLES COLLECTED</b>	<b>TYPE:</b> N/A		<b>LAB DATA ATTACHED?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>SELF-MONITORING</b>	<b>OPERATION REPORTS SUBMITTED:</b> <input checked="" type="checkbox"/> Sat. <input type="checkbox"/> Marg. <input type="checkbox"/> Unsat.	<b>REQUIRED DATA ON REPORT:</b> <input checked="" type="checkbox"/> Sat. <input type="checkbox"/> Marg. <input type="checkbox"/> Unsat.	<b>TESTING ADEQUACY:</b> <input checked="" type="checkbox"/> Sat. <input type="checkbox"/> Marg. <input type="checkbox"/> Unsat.

SIGNATURE				
<b>AUTHENTICATION</b>	<b>INSPECTOR:</b> 	<b>DATE:</b> 6-29-01	<b>REVIEWER:</b>	<b>DATE:</b>
<b>NAME &amp; TITLE</b>	DOUG A. HAWKER ENVIRONMENTAL SPECIALIST		DOUG A. HAWKER ENVIRONMENTAL SPECIALIST	

File Name g:\waterloo01\csl.doc  
Form WWins.dot  
File # 60790001

Facility Name: Waterloo Municipal WWTP  
Inspection Date: 5-17-01  
Page 2 of 5

**Observations & Recommendations:**

On May 17, 2001, I inspected the Wastewater treatment plant that serves the City of Waterloo. Below is a list of observations made and comments received during this inspection.

***DESCRIPTION:***

1. The present NPDES permit for this facility lists 10 separate discharge points. Outfall 001 is listed as the discharge from the "old" Easton Avenue Trickling Filter WWTP, outfalls 002, 003, 004, 005, 006, and 007 are listed as various lift station overflows located around the City. Outfall 008 is listed as the discharge from the "new" satellite activated sludge WWTP. Outfall 009 is listed as the river diffuser shoreline overflow. Outfall 801 is listed as the total treatment facility diffuser discharge. This is the combined discharge from Outfalls 001 and 008. The regulated discharges from the Waterloo WWTP discharge into the Cedar River through a cross-river diffuser. High river flows and their associated head pressure upon the cross-river diffuser can force the discharging water to go through the old original discharge canal as opposed to going out the diffuser. This was the situation on the date of this inspection.

***PERSONNEL:***

2. Current personnel at the Waterloo WWTP include:

Tim Shea - Grade IV - Wastewater Superintendent  
Keith Kearns - Grade II - Operations Foreman  
Larry Smith - Grade II - Collection Systems/Maintenance Supervisor  
Roscanne Cory - Grade II - Pretreatment Coordinator  
Brian Bowman - Grade III - Lab Tech. 2

Kathy Skillings - Grade II - Lab Tech. 1  
Tina Knebel - Grade I - Lab Tech. 1

3. In addition, there are seven other operators in both maintenance and operations. Most of these operators have their Grade II licenses. However, operator Brian Rath has a grade IV operator's license. All personnel are encouraged to continue to work towards obtaining their Grade III and IV licenses.

***EASTON AVENUE (OLD) PLANT:***

4. The Easton Avenue Plant is currently treating about 1/2 of the total domestic wastewater flows from the City. Wastewater comes to the Easton Avenue Plant through a dedicated "domestic" sewer main. The flows are initially treated by two traveling bar screens that are alternated weekly. These bar screens are located in the new headworks building. Rags and screenings are currently loaded directly into a garbage truck and taken to the Blackhawk County Landfill for disposal. This building was added on to after it had been originally built to enable the garbage trucks to be fully enclosed during cold weather. A new pump station has been built at this location during the past year which is allowing the other 1/2 of the total domestic flows to be pumped to the industrial

satellite WWTP. This is being done to take the pressure off the old domestic WWTP during the ongoing construction activities.

5. Currently two out of six of Easton's primary clarifiers remain in operation, two have been completely removed, and two remain on standby. These are not scheduled to be used again in the future and all remaining primary clarifiers will need to be eventually demolished. The two largest roughing filters remain in operation. Three roughing filters have been discontinued with one being completely filled in with rubble and the other two still in existence but soon to be filled in.
6. One of two intermediate clarifiers still exists and is in operation. The newer of the two intermediate clarifiers is presently being renovated into a sludge storage tank. This will be one of the only presently existing treatment units of the old Easton Plant that will be used once the new treatment facilities come on line.
7. Domestic flows then go to the three remaining standard rate trickling filters. Out of the original ten trickling filters, five have been totally removed and two have been filled in place. From the trickling filters, the treated wastewater goes to the final clarifiers. Of the seven final clarifiers, the original four are still being used. Clarifiers #5 and #6 are off line and have been filled in place. The newest final clarifier (#7) has also been taken off line and there are no plans to return it to service. This clarifier will also be filled in place in the future.
8. The final discharge from the old Easton Avenue plant was very clear. This discharge joins with the final flows from the industrial satellite plant prior to being discharged into the Cedar River. As noted earlier in this report, high flow levels in the Cedar River due to upstream rainfall were preventing the discharges from going out through the cross-river diffuser. The final discharge flows were going out the old discharge canal. The water quality appeared to be fairly clear, however, a great deal of foam was being generated within the discharge canal.

#### **INDUSTRIAL SATELLITE PLANT:**

9. Wastewater from the IBP anaerobic pretreatment lagoon and from Eagle Tanning's pretreatment facility flows through a dedicated industrial sewer main to the lift station wet well located in the pump and grit removal building. From here it is pumped to the magnesium hydroxide building and ultimately into the aeration basins. In addition about 1/2 of the normal domestic flow to the Easton Avenue portion of the WWTP is being pumped to the satellite plant for treatment during the ongoing construction project. Both aeration basins are currently on line. The blending of the domestic flows into this treatment system is allowing the city to not operate the magnesium hydroxide feed system at this time. The influent sampler for the industrial plant has been moved from the pump building over to the magnesium hydroxide building.
10. The flows from these aeration basins enter into four final clarifiers. At the time of this inspection all four final clarifiers were in use.
11. The final discharge from these clarifiers then goes into a flow metering and monitoring channel prior to combining with the effluent from the Easton Avenue Plant. The discharge on this date appeared to be very clean and clear.

#### **SOLIDS HANDLING:**

12. Sludge from both the Easton Avenue Plant and the Industrial Satellite Plant (after being thickened) are ultimately treated in six old digesters. Four of these have been operated as primary digesters and two are operated as secondary digesters. The treated sludge is then pumped to the filter press

building and dewatered with a pair of filter presses. Filtered sludge is ultimately land applied on area farm ground by Nutri-Ject Company, a contract waste hauler.

13. A major renovation project is currently underway which will ultimately result in the complete refurbishment of the digester complex. This project includes the construction of a new control building, the installation of four new fixed digester covers and two new floating covers, and the installation of new heat exchangers in each digester. This will turn the system into a Thermophilic/mesophilic treatment system.

#### ***STORM WATER RETENTION BASIN:***

14. The two cell storm water retention continues to be utilized during wet weather conditions. At the time of this inspection, there was some water within these basins due to recent precipitation events. This water was to be bled back through the treatment plant in the near future. The storm water retention basins are operating as designed with no significant areas of concern.

#### ***IBP ANAEROBIC PRETREATMENT LAGOON:***

15. Since the last inspection, the damaged cover on this treatment unit has been completely removed and replaced. The City continues to flare off the accumulating methane gas. Some electrical control work was being done at the time of this inspection. The City continues to feed magnesium bisulfite into the discharge coming from the anaerobic lagoon prior to it's entry into a dedicated sanitary sewer line going to the industrial satellite plant. This helps keep the hydrogen sulfide levels in check and helps reduce the associated odors.

#### ***LAB CERTIFICATION:***

16. Waterloo has been certified by UHL personnel for wastewater analysis.

#### ***NEW CONSTRUCTION:***

17. The new domestic treatment plant (Easton Avenue Plant) project is currently over 85% complete. Estimated dates for final completion vary from the end of July to the end of September. Once the new treatment facilities are brought on line, all domestic flow will go to the "new" Easton Avenue Plant with the discharges from IBP and Eagle Tanning going to the satellite industrial plant. It appears that these two plant will have an excessive amount of treatment capacity for the foreseeable future.

#### ***COMPLIANCE:***

18. A review of the monitoring reports since the date of the last inspection, shows that the Waterloo WPCP has routinely remained in compliance with all permit discharge limitations. The combined discharge from the two wastewater plants continues to be of very good quality.
19. On this date, it was noted that the new effluent sampling station for the Waterloo WPCP will consist of an automatic sampler on the domestic (Easton Plant) discharge line and an automatic sampler on the industrial (satellite) discharge line. Apparently, these two samplers will combine their samples in a single collection vessel which will then be analyzed as the final discharge from the entire plant. It is anticipated that a new NPDES permit will soon be issued to Waterloo that

IOWA DEPARTMENT OF NATURAL RESOURCES  
National Pollutant Discharge Elimination System (NPDES) Permit

PERMITTEE

CITY OF WATERLOO  
CITY CLERK, CITY HALL  
715 MULBERRY STREET  
WATERLOO, IA 50703

IDENTITY AND LOCATION OF FACILITY

WATERLOO CITY OF STP  
Section 21, T 89N, R12W  
BLACK HAWK County, Iowa

IOWA NPDES PERMIT NUMBER: 0790001

RECEIVING STREAM

DATE OF ISSUANCE: 09-10-2002

CEDAR RIVER

DATE OF EXPIRATION: 09-09-2007

ROUTE OF FLOW

YOU ARE REQUIRED TO FILE  
FOR RENEWAL OF THIS PERMIT BY: 03-13-2007

EPA NUMBER: IA0042650

This permit is issued pursuant to the authority of section 402(b) of the Clean Water Act (33 U.S.C 1342(b)), Iowa Code section 485B.174, and rule 567--64.3, Iowa Administrative Code. You are authorized to operate the disposal system and to discharge the pollutants specified in this permit in accordance with the effluent limitations, monitoring requirements and other terms set forth in this permit.

You may appeal any conditions of this permit by filing a written notice of appeal and request for administrative hearing with the director of this department within 30 days of your receipt of this permit.

Any existing, unexpired Iowa operation permit or Iowa NPDES permit previously issued by the department for the facility identified above is revoked by the issuance of this permit. This provision does not apply to any authorization to discharge under the terms and conditions of a general permit issued by the department or to any permit issued exclusively for the discharge of storm water.

FOR THE DEPARTMENT OF NATURAL RESOURCES

By

Wayne Farrand, Supervisor  
Wastewater Section  
ENVIRONMENTAL SERVICES DIVISION

Facility Name: WATERLOO CITY OF STP

Page 2

Permit Number: 0790001

Outfall  
Number

Description

001	EASTON AVENUE ACTIVATED SLUDGE WASTEWATER TREATMENT FACILITY.
002	COMBINED SEWER OVERFLOW LOCATED AT GATE ON 60 INCH LINE AHEAD OF BAR SCREEN.
004	COMBINED SEWER OVERFLOW LOCATED AT THE HACKETT ROAD LIFT STATION.
008	SATELLITE ACTIVATED SLUDGE WASTEWATER TREATMENT FACILITY.
009	RIVER DIFFUSER SHORELINE OVERFLOW
010	EQUALIZATION BASIN OVERFLOW
801	TOTAL TREATMENT FACILITY DIFFUSER DISCHARGE.

Outfall  
Number

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009	RIVER DIFFUSER SHORELINE OVERFLOW
010	EQUALIZATION BASIN OVERFLOW
801	TOTAL TREATMENT FACILITY DIFFUSER DISCHARGE.

Permit Number: 0790001

OUTFALL NO.: 801 TOTAL TREATMENT FACILITY DIFFUSER DISCHARGE.

You are prohibited from discharging pollutants except in compliance with the following effluent limitations:

Wastewater Parameter	Season	Type	EFFLUENT LIMITATIONS							
			Concentration				Mass			
			7 Day Average	30 Day Average	Daily Maximum	Units	7 Day Average	30 Day Average	Daily Maximum	Units
CBOD5	YEARLY	FINAL	40.0000	25.0000		MG/L	11609.00	7258.00		LBS/DAY
CBOD5			85 PERCENT REMOVAL REQUIRED							
TOTAL SUSPENDED SOLIDS	YEARLY	FINAL	45.0000	30.0000		MG/L	13060.00	8707.00		LBS/DAY
TOTAL SUSPENDED SOLIDS			85 PERCENT REMOVAL REQUIRED							
AMMONIA NITROGEN (N)	MAR	FINAL		30.0000	108.0000	MG/L		4986.00	18342.00	LBS/DAY
AMMONIA NITROGEN (N)	APR	FINAL		21.0000	78.0000	MG/L		3510.00	14327.00	LBS/DAY
AMMONIA NITROGEN (N)	MAY	FINAL		18.0000	78.0000	MG/L		2955.00	14127.00	LBS/DAY
AMMONIA NITROGEN (N)	JUN	FINAL		11.0000	77.0000	MG/L		1927.00	13842.00	LBS/DAY
AMMONIA NITROGEN (N)	JUL	FINAL		14.0000	87.0000	MG/L		2277.00	15822.00	LBS/DAY
AMMONIA NITROGEN (N)	AUG	FINAL		12.0000	73.0000	MG/L		2076.00	13821.00	LBS/DAY
AMMONIA NITROGEN (N)	SEP	FINAL		13.0000	94.0000	MG/L		2216.00	16619.00	LBS/DAY
AMMONIA NITROGEN (N)	OCT	FINAL		30.0000	93.0000	MG/L		5008.00	18317.00	LBS/DAY
AMMONIA NITROGEN (N)	NOV	FINAL		38.0000	78.0000	MG/L		6268.00	13935.00	LBS/DAY
AMMONIA NITROGEN (N)	DEC	FINAL		45.0000	93.0000	MG/L		7417.00	16416.00	LBS/DAY
PH (MINIMUM - MAXIMUM)	YEARLY	FINAL	8.0000		9.0000	STD UNITS				
ACUTE TOXICITY, CERIODAPHNIA	YEARLY	FINAL						1.00		NON TOXIC
ACUTE TOXICITY, PIMEPHALES	YEARLY	FINAL						1.00		NON TOXIC

NOTE: If seasonal limits apply, summer is from April 1 through October 31, and winter is from November 1 through March 31.

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1a Dnr

Jan 05 04 02:19p



Permit Number: 0790001

## Monitoring and Reporting Requirements

- (a) Samples and measurements taken shall be representative of the volume and nature of the monitored wastewater.
- (b) Analytical and sampling methods as specified in 40 CFR Part 136 or other methods approved in writing by the department, shall be utilized.
- (c) Chapter 63 of the rules provides you with further explanation of your monitoring requirements.
- (d) You are required to report all data including calculated results needed to determine compliance with the limitations contained in this permit. This includes daily maximums and minimums, 30-day averages and 7-day averages for all parameters that have concentration (mg/l) and mass (lbs/day) limits. Also, flow data shall be reported in million gallons per day (MGD).
- (e) Results of all monitoring shall be recorded on forms provided by, or approved by, the department, and submitted to the department by the fifteenth day following the close of the reporting period. Your reporting period is on a monthly basis, ending on the last day of each month.

Outfall Number	Wastewater Parameter	Sample Frequency	Sample Type	Monitoring Location
001	FLOW	7/WEEK	24 HR TOTAL	RAW WASTE
001	CBODS	3/WEEK	24 HR COMP	RAW WASTE
001	BIOCHEMICAL OXYGEN DEMAND (BOD5)	3/WEEK	24 HR COMP	RAW WASTE
001	TOTAL SUSPENDED SOLIDS	3/WEEK	24 HR COMP	RAW WASTE
001	PH (MINIMUM - MAXIMUM)	3/WEEK	GRAB	RAW WASTE
001	TEMPERATURE	3/WEEK	GRAB	RAW WASTE
001	CBODS	3/WEEK	24 HR COMP	FINAL EFFLUENT
001	TOTAL SUSPENDED SOLIDS	3/WEEK	24 HR COMP	FINAL EFFLUENT
001	AMMONIA NITROGEN (N)	1/WEEK	24 HR COMP	FINAL EFFLUENT
001	PH (MINIMUM - MAXIMUM)	3/WEEK	GRAB	FINAL EFFLUENT
001	CADMIUM, TOTAL (AS CD)	1/MONTH	24 HR COMP	FINAL EFFLUENT
001	CHROMIUM, HEXAVALENT (AS CR)	1/MONTH	GRAB	FINAL EFFLUENT
001	COPPER, TOTAL (AS CU)	1/MONTH	24 HR COMP	FINAL EFFLUENT
001	CYANIDE, TOTAL (AS CN)	1/MONTH	GRAB	FINAL EFFLUENT
001	LEAD, TOTAL (AS PB)	1/MONTH	24 HR COMP	FINAL EFFLUENT
001	MERCURY, TOTAL (AS HG)	1/MONTH	24 HR COMP	FINAL EFFLUENT
001	SILVER, TOTAL (AS AG)	1/MONTH	24 HR COMP	FINAL EFFLUENT
001	SETTLEABLE SOLIDS	3/WEEK	GRAB	FINAL EFFLUENT
001	TEMPERATURE	3/WEEK	GRAB	FINAL EFFLUENT
001	ZINC, TOTAL (AS ZN)	1/MONTH	24 HR COMP	FINAL EFFLUENT
001	ACUTE TOXICITY, CERIODAPHNIA	1/12 MONTHS	24 HR COMP	FINAL EFFLUENT

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1a Dnr

Jan 05 04 02:20p

Permit Number: 0790001

## Monitoring and Reporting Requirements

- (a) Samples and measurements taken shall be representative of the volume and nature of the monitored wastewater.
- (b) Analytical and sampling methods as specified in 40 CFR Part 136 or other methods approved in writing by the department, shall be utilized.
- (c) Chapter 83 of the rules provides you with further explanation of your monitoring requirements.
- (d) You are required to report all data including calculated results needed to determine compliance with the limitations contained in this permit. This includes daily maximums and minimums, 30-day averages and 7-day averages for all parameters that have concentration (mg/l) and mass (lbs/day) limits. Also, flow data shall be reported in million gallons per day (MGD).
- (e) Results of all monitoring shall be recorded on forms provided by, or approved by, the department, and submitted to the department by the fifteenth day following the close of the reporting period. Your reporting period is on a monthly basis, ending on the last day of each month.

Outfall Number	Wastewater Parameter	Sample Frequency	Sample Type	Monitoring Location
001	ACUTE TOXICITY, PIMEPHALES	1/12 MONTHS	24 HR COMP	FINAL EFFLUENT
001	PH (MINIMUM - MAXIMUM)	3/WEEK	GRAB	DIGESTER CONTENTS
001	ALKALINITY, TOTAL (AS CaCO <sub>3</sub> )	2/WEEK	GRAB	DIGESTER CONTENTS
001	TEMPERATURE	3/WEEK	GRAB	DIGESTER CONTENTS
001	VOLATILE ACIDS	2/WEEK	GRAB	DIGESTER CONTENTS
001	DISSOLVED OXYGEN (MINIMUM)	3/WEEK	GRAB	AERATION BASIN CONTENTS
001	SOLIDS, MIXED LIQUOR SUSPENDED	3/WEEK	GRAB	AERATION BASIN CONTENTS
001	TEMPERATURE	3/WEEK	GRAB	AERATION BASIN CONTENTS
001	30-MINUTE SETTLEABILITY	3/WEEK	GRAB	AERATION BASIN CONTENTS
008	CBOD <sub>5</sub>	3/WEEK	24 HR COMP	RAW WASTE
008	BIOCHEMICAL OXYGEN DEMAND (BOD <sub>5</sub> )	3/WEEK	24 HR COMP	RAW WASTE
008	TOTAL SUSPENDED SOLIDS	3/WEEK	24 HR COMP	RAW WASTE
008	PH (MINIMUM - MAXIMUM)	3/WEEK	GRAB	RAW WASTE
008	TEMPERATURE	3/WEEK	GRAB	RAW WASTE
008	FLOW	7/WEEK	24 HR TOTAL	FINAL EFFLUENT
008	CBOD <sub>5</sub>	3/WEEK	24 HR COMP	FINAL EFFLUENT
008	TOTAL SUSPENDED SOLIDS	3/WEEK	24 HR COMP	FINAL EFFLUENT
008	AMMONIA NITROGEN (N)	1/WEEK	24 HR COMP	FINAL EFFLUENT
008	PH (MINIMUM - MAXIMUM)	3/WEEK	GRAB	FINAL EFFLUENT
008	CADMIUM, TOTAL (AS Cd)	1/MONTH	24 HR COMP	FINAL EFFLUENT
008	CHROMIUM, HEXAVALENT (AS Cr)	1/MONTH	GRAB	FINAL EFFLUENT

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1a Dnr

Jan 05 04 02:21p

Permit Number: 0790001

## Monitoring and Reporting Requirements

- (a) Samples and measurements taken shall be representative of the volume and nature of the monitored wastewater.
- (b) Analytical and sampling methods as specified in 40 CFR Part 136 or other methods approved in writing by the department, shall be utilized.
- (c) Chapter 63 of the rules provides you with further explanation of your monitoring requirements.
- (d) You are required to report all data including calculated results needed to determine compliance with the limitations contained in this permit. This includes daily maximums and minimums, 30-day averages and 7-day averages for all parameters that have concentration (mg/l) and mass (lbs/day) limits. Also, flow data shall be reported in million gallons per day (MGD).
- (e) Results of all monitoring shall be recorded on forms provided by, or approved by, the department, and submitted to the department by the fifteenth day following the close of the reporting period. Your reporting period is on a monthly basis, ending on the last day of each month.

Outfall Number	Wastewater Parameter	Sample Frequency	Sample Type	Monitoring Location
008	COPPER, TOTAL (AS CU)	1/MONTH	24 HR COMP	FINAL EFFLUENT
008	CYANIDE, TOTAL (AS CN)	1/MONTH	GRAB	FINAL EFFLUENT
008	LEAD, TOTAL (AS PB)	1/MONTH	24 HR COMP	FINAL EFFLUENT
008	MERCURY, TOTAL (AS HG)	1/MONTH	24 HR COMP	FINAL EFFLUENT
008	SILVER, TOTAL (AS AG)	1/MONTH	24 HR COMP	FINAL EFFLUENT
008	SETTLABLE SOLIDS	3/WEEK	GRAB	FINAL EFFLUENT
008	TEMPERATURE	3/WEEK	GRAB	FINAL EFFLUENT
008	ZINC, TOTAL (AS ZN)	1/MONTH	24 HR COMP	FINAL EFFLUENT
008	ACUTE TOXICITY, CERIODAPHNIA	1/12 MONTHS	24 HR COMP	FINAL EFFLUENT
008	ACUTE TOXICITY, PINEPHALES	1/12 MONTHS	24 HR COMP	FINAL EFFLUENT
008	DISSOLVED OXYGEN (MINIMUM)	3/WEEK	GRAB	AERATION BASIN CONTENTS
008	SOLIDS, MIXED LIQUOR SUSPENDED	3/WEEK	GRAB	AERATION BASIN CONTENTS
008	TEMPERATURE	3/WEEK	GRAB	AERATION BASIN CONTENTS
008	30-MINUTE SETTLABILITY	3/WEEK	GRAB	AERATION BASIN CONTENTS
009	FLOW	7/WEEK	VISUAL	REPORT OVERFLOW AS PER SPECIAL LIMITS & MONITORING REQUIREMENTS.
801	STREAM FLOW	7/WEEK	24 HR TOTAL	STREAM FLOW AT GAGE
801	FLOW	7/WEEK	CALCULATED	COMBINED EFFLUENT
801	CBOD5	3/WEEK	CALCULATED	COMBINED EFFLUENT
801	TOTAL SUSPENDED SOLIDS	3/WEEK	CALCULATED	COMBINED EFFLUENT
801	AMMONIA NITROGEN (N)	1/WEEK	CALCULATED	COMBINED EFFLUENT
801	PH (MINIMUM - MAXIMUM)	3/WEEK	GRAB	COMBINED EFFLUENT

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1a Dnr

Jan 05 04 02:22p

Permit Number: 0790001

## Monitoring and Reporting Requirements

- (a) Samples and measurements taken shall be representative of the volume and nature of the monitored wastewater.
- (b) Analytical and sampling methods as specified in 40 CFR Part 136 or other methods approved in writing by the department, shall be utilized.
- (c) Chapter 63 of the rules provides you with further explanation of your monitoring requirements.
- (d) You are required to report all data including calculated results needed to determine compliance with the limitations contained in this permit. This includes daily maximums and minimums, 30-day averages and 7-day averages for all parameters that have concentration (mg/l) and mass (lbs/day) limits. Also, flow data shall be reported in million gallons per day (MGD).
- (e) Results of all monitoring shall be recorded on forms provided by, or approved by, the department, and submitted to the department by the fifteenth day following the close of the reporting period. Your reporting period is on a monthly basis, ending on the last day of each month.

Outfall Number	Wastewater Parameter	Sample Frequency	Sample Type	Monitoring Location
801	CADMIUM, TOTAL (AS CD)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	CHROMIUM, HEXAVALENT (AS CR)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	COPPER, TOTAL (AS CU)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	CYANIDE, TOTAL (AS CN)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	LEAD, TOTAL (AS PB)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	MERCURY, TOTAL (AS HG)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	SILVER, TOTAL (AS AG)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	ZINC, TOTAL (AS ZN)	1/MONTH	CALCULATED	COMBINED EFFLUENT
801	ACUTE TOXICITY, CERIODAPHNIA	1/12 MONTHS	CALCULATED	COMBINED EFFLUENT
801	ACUTE TOXICITY, PIMEPHALES	1/12 MONTHS	CALCULATED	COMBINED EFFLUENT
801	CBOD5	3/WEEK	CALCULATED	TOTAL RAW WASTE
801	BIOCHEMICAL OXYGEN DEMAND (BOD5)	3/WEEK	CALCULATED	TOTAL RAW WASTE
801	TOTAL SUSPENDED SOLIDS	3/WEEK	CALCULATED	TOTAL RAW WASTE

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1a Dnr

Jan 05 04 02:23p

## Outfall

Number Description

801 CB005

DAILY FLOW SHALL BE MEASURED AT THE EASTON AVENUE AND THE SATELLITE WASTEWATER TREATMENT PLANTS. THE DAILY FLOW MEASURED AT EACH PLANT SHALL NOT INCLUDE ANY RECYCLE FLOWS. THE TOTAL DAILY FLOW SHALL BE CALCULATED FOR THE TREATMENT WORKS AND BE USED TO CALCULATE THE MASS (LBS/DAY) OF EACH POLLUTANT DISCHARGED FROM THE TREATMENT WORKS.

801 CB005

DAILY FLOW MEASUREMENT AND 24-HOUR COMPOSITE SAMPLES ARE REQUIRED AT EACH INFLUENT LINE TO THE EASTON AVENUE AND SATELLITE WASTEWATER TREATMENT PLANTS TO DETERMINE THE DAILY FLOW (MGD) AND MASS (LBS/DAY) OF CB005, B005, AND TSS RECEIVED BY EACH PLANT. THE TOTAL DAILY TREATMENT FACILITY INFLUENT LOAD FOR FLOW, CB005, AND TSS SHALL THEN BE CALCULATED.

Facility Name: Waterloo, City of  
NPDES Permit number: 0790001

### **Special Limits and Monitoring**

#### **Flow-Proportional Sampling for Outfall 801:**

Flow proportional sampling is achieved by drawing samples from each of the plant effluents (001 and 008) and combining them into a single sample bottle. The use of flow-proportional sampling is acceptable if it demonstrates that a representative sample of the combined final effluent (Outfall 801) is achieved. This means both flow-proportional sampling and combined calculated monitoring will be completed simultaneously for at least 6 months to determine if the flow-proportionate sampling is accurate. A report shall be submitted to the Department for review. If the report indicates accurate sampling, then simultaneous sampling can be discontinued and flow-proportional-sampling will be acceptable.

Flow-proportionate sampling requirements will not apply if the effluent grab samples and 24-hour composite samples specified by this permit are collected at a common sampling point located prior to the diffuser where flows from the Easton Avenue and Satellite Plants are combined.

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#### **Diffuser Shoreline Overflow (Outfall 009):**

No discharge from diffuser shoreline overflow is permitted when the stream flow in the Cedar River is less than 1,500 CFS as measured at the USGS gage No. 5-464000 in Waterloo.

The permittee shall monitor when discharges from the diffuser shoreline overflow occur and report the day or days when this overflow is used and the corresponding river flow in CFS for the days overflow is used.

#### **Diffuser Performance & Bathymetric Report:**

Annually, the City is required to submit to the Department a report demonstrating that the diffuser is uniformly distributing the effluent across the low flow channel in the Cedar River. The report shall include field data collected during low river flow conditions characterizing the spatial mixing of the effluent with river flow within 100 feet downstream of the diffuser pipe.

The report shall also characterize the bathymetric features (river depths) of the entire river cross section along the diffuser and any proposed adjustments to the active diffuser ports to comply with the designed operation of the diffuser in the low flow channel. Ninety days following any adjustments to the location of the active diffuser ports, the City shall submit a report (similar to the requirement above) demonstrating the uniform distribution of the effluent in the low flow channel.

## **Design Capacity – Standard Conditions**

**Facility Name: City of Waterloo**

**Page 10**

**NPDES Permit number: 07-90-0-01**

**Outfall Number: 001 Easton Avenue Activated Sludge Wastewater Treatment Facility.**

**Outfall Number: 008 Satellite Activated Sludge Wastewater Treatment Facility.**

**Outfall Number: 801 Total Treatment Facility Diffuser Discharge.**

The design capacity for the treatment works for Outfall 001 is specified in the Construction Permit #98-361-S issued August 21, 1998. The treatment plant is designed to treat an average dry weather (ADW) flow of 12.7 million gallons per day (MGD), an average wet weather (AWW) flow of 26.7 MGD, and a maximum wet weather (MWW) flow of 36.0 MGD. The design 5-day biochemical oxygen demand (BOD<sub>5</sub>) load is 30,000 lbs./day.

The design capacity for the treatment works for Outfall 008 is specified in the Construction Permit #95-317-S issued July 7, 1995. The treatment plant is designed to treat an average dry weather (ADW) flow of 5.3 million gallons per day (MGD), an average wet weather (AWW) flow of 8.1 MGD, and a maximum wet weather (MWW) flow of 11.1 MGD. The design 5-day biochemical oxygen demand (BOD<sub>5</sub>) load is 58,000 lbs./day.

The design capacity for the combined treatment works for Outfall 801 is an average dry weather (ADW) flow of 18.0 million gallons per day (MGD), an average wet weather (AWW) flow of 34.8 MGD, and a maximum wet weather (MWW) flow of 47.1 MGD. The design 5-day biochemical oxygen demand (BOD<sub>5</sub>) load is 88,000 lbs./day.

Wastes in such volumes or quantities as to exceed the design capacity of the treatment works or reduce the effluent quality below that specified in the operation permit of the treatment works are considered to be a waste which interferes with the operation or performance of the treatment works and are prohibited by rule IAC 567—62.1(7).

Facility Name: Waterloo, City of  
Permit Number: 07-90-0-01

Outfall Number: 801 Total Treatment Facility Diffuser Discharge.

Ceriodaphnia and Pimephales Toxicity Effluent Testing

1. For facilities that have not been required to conduct toxicity testing by a previous NPDES permit, the initial annual toxicity test shall be conducted within three (3) months of permit issuance. For facilities that have been required to conduct toxicity testing by a previous NPDES permit, the initial annual toxicity test shall be conducted within twelve months (12) of the last toxicity test.
2. The test organisms that are to be used for acute toxicity testing shall be *Ceriodaphnia dubia* and *Pimephales promelas*. The acute toxicity testing procedures used to demonstrate compliance with permit limits shall be those listed in 40 CFR Part 136 and adopted by reference in rule 567-63.1(1). The method for measuring acute toxicity is specified in USEPA, 1993, Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio August 1993, EPA/600/4-90/027F.
3. The diluted effluent sample must contain a minimum of 9.4 % effluent and no more than 90.6 % of culture water.
4. One valid positive toxicity result will require quarterly testing for effluent toxicity.
5. Two successive valid positive toxicity results or three positive results out of five successive valid effluent toxicity tests will require a toxic reduction evaluation to be completed to eliminate the toxicity.
6. A non-toxic test result shall be indicated as a "1" on the monthly operation report. A toxic test result shall be indicated as a "2" on the monthly operation report. DNR Form 542-1381 shall also be submitted to the DNR field office along with the monthly operation report.

Ceriodaphnia and Pimephales Toxicity Effluent Limits

The 30 day average mass limit of "1" for the parameters Acute Toxicity, *Ceriodaphnia* and Acute Toxicity, *Pimephales* means no positive toxicity results.

**Definition:** "Positive toxicity result" means a statistical difference of mortality rate between the control and the diluted effluent sample. For more information see USEPA, 1993, Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio August 1993, EPA/600/4-90/027F.

Revised: July 31, 1996 cwf



**SPECIAL CONDITIONS - COMBINED SEWER OVERFLOWS**

Facility Name: Waterloo, City of

NPDES Permit Number: 07-90-0-01

The collection system for the City of Waterloo consists of combined storm and sanitary sewers (CSS) with combined sewer overflows (CSO) at the following outfalls:

Outfall 002 - Combined Sewer Overflow located at Gate on 60-inch line ahead of Bar Screen, which discharges to the Cedar River.

Outfall 004 - Combined Sewer Overflow located at the Hackett Road Lift Station, which discharges to the Cedar River.

This permit incorporates these discharge points as permitted CSO outfalls and authorizes wet weather discharges from these outfalls with the following the special conditions:

1. The City of Waterloo shall develop and submit no later than six months from the issuance date of this permit a combined sewer system operational plan which provides for all actions necessary for implementation of the Nine Minimum Controls detailed within the CSO Control Policy published as Final Policy in the April 19, 1994 Federal Register. The Nine Minimum Controls are:

3/10/03

1. Proper operation, and regular inspection and maintenance programs for the sewer system and the CSOs to reduce the magnitude, frequency, and duration of CSOs.
2. Maximum use of the collection system for storage to reduce the magnitude, frequency, and duration of CSOs.
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized from nondomestic dischargers.
4. Maximization of flow to the POTW for treatment during wet weather conditions to reduce the magnitude, frequency, and duration of CSOs.
5. Prohibition of CSOs during dry weather conditions.
6. Control of solid and floatable materials in CSOs.
7. Pollution prevention program to reduce the impact of CSOs on receiving waters.
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.
9. Monitoring CSO outfalls to effectively characterize CSO impacts and the efficacy of CSO controls.

For technical guidance in developing the CSS operational plan refer to the *Combined Sewer Overflows-Guidance for Nine Minimum Controls* (EPA 832-B-95-003, May 1995).

2. The City of Waterloo shall implement those actions identified in the CSS operational plan necessary to comply with the Nine Minimum Controls as soon as possible but no later than twenty-four (24) months from the issuance date of this permit.

9/10/04

**SPECIAL CONDITIONS - COMBINED SEWER OVERFLOWS**

3. The City of Waterloo shall submit a report documenting those actions taken, as identified in the CSS operational plan, for implementing the Nine Minimum Controls as soon as possible but no later than twenty-four (24) months from the issuance date of this permit.

9/10/04

4. The City of Waterloo shall submit a Long-Term Control Plan (LTCP) that will include the following elements:

a) CSS characterization which is based on:

- 1) Rainfall records review;
- 2) CSS records review;
- 3) CSO and water quality monitoring;
- 4) Identification of sensitive areas; and
- 5) CSS analysis and its impacts on the receiving water body.

b) Development and evaluation of CSO control alternatives based on:

- 1) Development of CSO control alternatives;
- 2) Evaluation of CSO control alternatives;
- 3) Cost/performance considerations; and
- 4) Public participation.

c) Selection and implementation of LTCP based on:

- 1) Implementation schedule;
- 2) Operational plan; and
- 3) Post-construction compliance monitoring plan.

For technical guidance in developing the LTCP refer to the *Combined Sewer Overflows-Guidance for Long-Term Control Plan* (EPA 832-B-95-002, September 1994).

5. The City of Waterloo shall submit the LTCP within thirty-six (36) months from the issuance date of this permit.

9/10/05

6. The City of Waterloo shall not discharge any pollutant at a level that causes or contributes to an in-stream excursion above the numeric or narrative criteria developed and adopted as part of the State of Iowa's water quality standards in accordance with 567-61.3(455B).

7. This permit may be modified or revoked and reissued, as provided pursuant to 40 CFR 122.62 and 124.5, for the following reasons:

- a. To include new or revised conditions developed to comply with State or Federal law or regulation that addresses CSOs that is adopted or promulgated subsequent to the effective date of this permit.
- b. To include new or revised conditions if new information, not available at the time of permit issuance, indicates that CSO controls imposed under the permit have failed to ensure the attainment of the State water quality standards.
- c. To include new or revised conditions based on new information generated from the long-term control plan.

In addition, this permit may be modified or revoked and reissued for any reason specified in 40 CFR 122.62.

**MAJOR CONTRIBUTING INDUSTRIES  
LIMITATIONS, MONITORING AND REPORTING REQUIREMENTS**

1. You are required to notify the department, in writing, of any of the following:
  - (a) 180 days prior to the introduction of pollutants to your facility from a major contributing industry. A major contributing industry means an industrial user of a treatment works that:
    - (1) Has a flow of 50,000 gallons or more per average workday;
    - (2) Has a flow greater than five percent (5%) of the flow carried by the treatment works receiving the waste;
    - (3) Has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307 (a) of the Clean Water Act and adopted by reference in Rule 62.5(455B); or
    - (4) Is found by the department in connection with the issuance of an NPDES permit to have a significant impact, either alone or in combination with other contributing industries, on the treatment works or on the quality of effluent from the treatment works.
  - (b) 60 days prior to a proposed expansion, production increase or process modification that may result in the discharge of a new pollutant or a discharge in excess of limitations stated in the existing treatment agreement.
  - (c) 10 days prior to any commitment by you to accept waste from any new major contributing industry.

Your written notification must include a new or revised treatment agreement in accordance with rule 64.3(5)(455B).

2. You shall require all users of your facility to comply with Sections 204(b), 307 and 308 of the Clean Water Act.

Section 204(b) requires that all users of the treatment works constructed with funds provided under Sections 201(g) or 601 of the Act to pay their proportionate share of the costs of operation, maintenance and replacement of the treatment works.

Section 307 of the Act requires users to comply with pretreatment standards promulgated by EPA for pollutants that would cause interference with the treatment process or would pass through the treatment works.

Section 308 of the Act requires users to allow access at reasonable times to state and EPA inspectors for the purpose of sampling the discharge and reviewing and copying records.

3. You shall continue to implement the pretreatment program approved March 12, 1984 and any amendments thereto.
4. An annual report in the form prescribed by the Department is to be submitted by March 1<sup>st</sup> of each year describing the pretreatment program activities for the preceding calendar year.

**MAJOR CONTRIBUTING INDUSTRIES  
LIMITATIONS, MONITORING AND REPORTING REQUIREMENTS (Continued)**

5. The City shall evaluate the adequacy of its local limits to meet the general prohibitions against interference and pass through listed in 40 CFR 403.5(a) and the specific prohibitions listed in 40 CFR 403.5(b). At a minimum this evaluation shall consist of the following:
- (a) Identify each pollutant with the potential to cause process inhibition, pass through the treatment plant in concentrations that will violate NPDES permit limits of water quality standards, endanger POTW worker health and safety or degrade sludge quality.
  - (b) For each treatment plant, determine the maximum allowable headworks loading for each pollutant identified in item #5.a. that will prevent interference or a pass through.
  - (c) After accounting for the contribution of each pollutant from uncontrolled (i.e.: domestic/commercial) sources to each treatment plant, allocate the remaining treatment plant capacity to significant industrial users identified in the City's pretreatment program.
  - (d) Complete the evaluation and submit to the Department, by February 15, 2003 a report containing the following information:
    - 1) A list of pollutants identified in item #5.a.. For each pollutant state the reason(s) for its inclusion (e.g. potential to cause interference, potential to cause pass through, etc.).
    - 2) The report shall contain all calculations used to determine the maximum allowable headworks loadings and shall identify the source(s) of all data used (e.g. literature value, site specific measurement, etc.).
    - 3) The contribution of each pollutant identified in item #5d. 1). to each treatment plant from uncontrolled sources and an explanation of how each contribution was determined.
    - 4) The allocation of the maximum allowable headworks loading for each pollutant to each treatment plant, and an explanation of how the allowable loadings will be allocated to significant industrial users regulated by the City's pretreatment program.

## SLUDGE HANDLING AND DISPOSAL REQUIREMENTS

1. The permittee shall comply with all existing Federal and State laws and regulations that apply to the use and disposal of sewage sludge and with technical standards developed pursuant to Section 405(d) of the Clean Water Act when such standards are promulgated. If an applicable numerical limit or management practice for pollutants in sewage sludge is promulgated after issuance of this permit that is more stringent than a sludge pollutant limit or management practice specified in existing Federal or State laws or regulations, this permit shall be modified, or revoked and reissued, to conform to the regulations promulgated under Section 405(d) of the Clean Water Act. The permittee shall comply with the limitation no later than the compliance deadline specified in the applicable regulations.
2. The permittee shall provide written notice to the Department of Natural Resources prior to any planned changes in sludge disposal practices.
3. Land application of municipal sewage sludge shall be conducted in accordance with criteria established rule IAC 567-67.1 through 67.11(455B).

FINAL September 2003

U.S. Environmental Protection Agency  
Statistically Valid Noncompliance Rates Project FY 2004  
Nine Minimum Controls for Combined Sewer Overflows

Facility Name: Waters STP

Facility Address: 3505 Easton

Waters, IA 50705

NPDES Permit No.: IA 0042650

Date of Inspection: 2/3-4/04

Inspector Name: Margie St. Germain

Phone Number: 913-551-7209

Permitting Authority: Iowa Department of Natural Resources

(Submit completed forms to the EPA Regional Enforcement Coordinator on a quarterly-basis.)

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CSO Nine Minimum Control Requirements				
Requirement	1) Does the permit or enforcement agreement require: A-Implementation of the control? B-Documentation of the control? C-Both? D-Neither?	2) Has adequate documentation of the control been submitted? Y/N	3) Is the control implemented Y/N* <i>Due 9/10/04</i>	4) Is the control effective? Y/N**
Proper operation and regular maintenance programs for the sewer system and CSO outfalls	C	Y	Y	Y
Maximum use of the collection system for storage	C	Y	Y	Y
Review and modification of pretreatment requirements to ensure that CSO impacts are minimized	C	Y	Y	Y
Maximization of flow to the POTW for treatment	C	Y	Y	Y
Elimination of CSOs during dry weather	C	Y <i>none in 5 yrs</i>	Y	Y
Control of solid and floatable materials in CSOs	C	Y	Y	Y
Pollution prevention programs to reduce contaminants in CSOs	C	Y	Y	Y
Public notification	C	Y	Y	N
Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls	C	Y <i>-basins</i>	Y	Y

\*Implemented means that controls in place are consistent with the expectations of the permitting authority based on the language in the permit (or other enforceable document) and NMC documentation submitted.

**\*\*The Effectiveness Factor is your determination that if the implement controls will ensure any overflows that occur do so only as a result of wet weather and that the impacts of the CSOs on receiving streams have been minimized.**

Long-Term Control Requirements			
6) Does the permit or enforcement agreement require the development of a long-term control plan? Y/N	7) If Yes, has the CSO started to develop the plan? Y/N	8) If Yes, has the CSO begun to implement the plan? Y/N	Comments
Y	Y - due 9/10/2005	N	

Three outfalls existed within the Waterloo STP. One outfall was disconnected and reported to the state during the inspection. The equalization basin outfall is the result of flow diversion after the plant headworks. Therefore, this is a plant bypass point, not a CSO. The last outfall at Hackett Street does not have a combined system - it is upstream of all combined areas, and is not a CSO. Hackett Street Pump Station is an SSO.

Waterloo has some remaining combined lines in their system with all flows going to the plant without an opportunity for diversion or overflow. Waterloo should not be considered as a CSO community.



**Guidelines for Bypass Reporting & Response  
Iowa DNR Environmental Services  
Field Office 1 – Manchester, Iowa**

Listed below are the rules in the Iowa Administrative Code that apply to bypass reporting:

**567—63.6(455B) Report of bypass.**

**63.6(1)** Except for bypasses that occur as a result of mechanical failure or acts beyond the control of the owner, owners of waste disposal systems shall obtain written permission from the department prior to any bypassing of any sewage or wastes from the waste disposal system.

**63.6(2)** In the event that bypassing of sewage or waste occurs as a result of mechanical failure or acts beyond the control of the owner (other than rain or other precipitation), said owner shall notify the department by telephone of the bypassing within 12 hours of the time of the discovery of the bypassing. The owner shall comply with the instructions of the department calculated to minimize the effect of the bypassing on the receiving water of the state.

**63.6(3)** Bypasses other than those described in this rule shall be reported in the records of operation.

**Public Notification for Bypass Events**

Notification to the affected public shall be made for any bypass, except for precipitation related events.

The Field Office shall make the necessary notifications if a drinking water supply (Class C), primary contact recreation (Class A), high quality water (Class HQ), public use areas, or other sensitive areas are downstream of the bypass. The bypasser is required to make other notifications within 4 hours after being notified by the Department. If the bypasser refuses to make necessary notifications, this department will make the appropriate notifications. Notification information should include the following:

- ◆ When the bypass occurred or was discovered
- ◆ Location of the bypass
- ◆ Cause of the bypass
- ◆ Estimation of quantity bypassed
- ◆ Duration or expected duration of the bypass event
- ◆ Water body affected
- ◆ Anticipated impact of the bypass (water quality and/or human exposure risks)

At a minimum, the groups listed below must be contacted:

1. Media
  - ◆ Daily Newspaper if available
  - ◆ Area Radio and/or Television Station
2. Local Board of Health
3. Area DNR Conservation Officer
4. Local County Naturalist or Conservation Board
5. Downstream Livestock Water Users

It is strongly recommended that precipitation related bypass events also be reported to this department within the same 12 hour period, especially when there is a high human exposure risk from the bypass. For precipitation bypass events, this department will make all notifications that are deemed necessary by the department.

A copy of the information provided to the news media must be attached to monthly operation reports (MORs) that are submitted to this field office. In addition, the times when the notifications to the affected public were made should also be included on the MORs.

#### Monitoring

Water samples of the actual wastewater that was bypassed or if this is not feasible, raw waste entering the plant must be collected and analyzed for ammonia, CBOD5, and fecal bacteria.

#### Disinfection

The Department may require temporary disinfection by chlorination depending on volume/duration of bypassing, stream classification and use and time of year in which the public may be using the stream (i.e. class A waters used for canoeing, tubing, fishing).

#### Cleanup

The Department may require the cleanup of debris and waste materials deposited in the area impacted by the bypass. In conjunction with the cleanup, the department may require lime application to the ground surface or disinfection of the area with a chlorine solution (recommend a minimum chlorine concentration of 100 mg/l).

#### Phone Contacts

The bypass should be reported to a department staff person, a voice mail message is not acceptable. You can contact the Manchester Field Office by telephone at (563) 927-2640. After normal office hours contact the 24-hour emergency response number (515) 281-8694. Field Office staff will assist in providing additional phone numbers, including Conservation Officers and County Conservation Boards, upon request.

◆ Every reasonable effort must be made to prevent any raw waste from discharging to a water of the state, for any type of bypass.